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RUBBER PRODUCTION UNDISTURBED.

THE unsettled state of political affairs in Brazil during the year now closing does not seem, on the whole, to have interfered with the course of the rubber movement at Pará. It may be of interest to compare the arrivals at that port during the five months of the present crop year which have been completed with the corresponding period of the preceding year—that year showing, by the way, the largest shipments on record at that time:

	1892.	1893.
July (pounds)	1,804,000	1,980,000
August	2,354,000	2,640,000
September	3,344,000	2,970,000
October	3,674,000	4,114,000
November	4,070,000	4,015,000
Total (five months)	15,246,000	15,719,000

The indications are that we shall have statistics at the end of the calendar year 1893 to show a greater output from Pará than in any preceding year. The total exports from that point, in round numbers, for five years have been 33,000,000 pounds for 1888; 34,000,000 for 1889; 36,000,000 for 1890; 39,000,000 for 1891; and 40,000,000 for 1892.

It may be added that on November 1 the world's supply of Pará rubber was somewhat in excess of the figures for the same date in 1892, stocks being appreciably larger at Pará and nowhere smaller than in 1892 except in New York, where the deficiency was 149 tons. Evidently there is not yet any reason for departing from the position all the while maintained by THE INDIA RUBBER WORLD, that Brazil's rubber trade and the price of Pará rubber in the world's markets are not in danger of being unsettled by the belligerent situation in the harbor of Rio.

THE INDIA-RUBBER OUTLOOK IN PERU.

THE INDIA RUBBER WORLD is favored this month with an interesting contribution from Mr. Guillaume, the Peruvian consul-general at Southampton, in regard to the extent of the rubber forests in that portion of the Amazonian basin which is included in his country, and of the industry which has been organized in marketing the product. This paper is of value as confirming, from an authentic source, what explorers have already given us reason to believe with regard to the richness in rubber of this vast region, which is so liberally provided with navigable streams. But a point more important is the demonstration of the fact that this country is not wholly dependent, as has been supposed, upon the river Madeira as a means of reaching the Amazon. Already the mighty river Purús has become an important channel of transportation for the crude-rubber trade, and Mr. Guillaume tells us that by means of the river Aquiry (or Acre), which is its southernmost tributary, an important part of the eastern territory of Peru may find an outlet. Even the Beni-river country might find an outlet by means of the Aquiry without the conveyance of rubber overland for a greater distance than some of the natives used to transport rubber

from the upper stations on the Beni to reach the Yacuma and subsequently the Mamoré (a branch of the Madeira), in the days when the lower Beni was supposed to be unnavigable.

It is too early, of course, to accept as practical the suggestions made by Mr. Guillaume in relation to short lengths of railway to facilitate the transport of rubber and the other valuable native products of eastern Peru. It would be more practicable, it seems to us, to complete the projected railroad around the falls in the river Madeira, opening that stream to the trade not only of eastern Peru, but also of the Beni country as far as La Paz, in Bolivia, and also of the State of Matto Grosso, Brazil. Whatever may be done in relation to railroad-building, however, the fact remains that Peru and Bolivia are marvelously rich in *Hevea* rubber and that existing means of transportation are sufficient to augment to a notable extent the present output. Some figures given by Mr. Guillaume would indicate that the production of these countries is already much larger than is shown by the official statistics compiled at Pará and Manáos, which imply that the rubber floated down the Amazon is almost wholly of Brazilian origin.

It is a hopeful sign that on the Purús and its tributaries, before there has been time for the employment of such destructive methods as have caused rubber-trees to disappear at so many points on the Amazon, an interest has been awakened in the preservation of these trees and even in their cultivation. There is reason to believe that the native population of Peru is better fitted for taking an interest in rubber gathering as a permanent industry and in the proper care of the trees than are the tribes along the Amazon. But without reference to tribal differences among the Indians, it is worthy of note that in Peru, where the cinchona-tree still abounds in the forests, its cultivation has been undertaken on a large scale and with good results, showing that the advantages of cultivation are being appreciated as contrasted with the exploration of dense forests for the commodity to be marketed. As has already been pointed out in this journal, every argument in behalf of quinine cultivation may be applied with equal force to the artificial production of India-rubber in those countries which nature has designated as particularly adapted to its growth.

RUMORS OF NEW RUBBER-SHOE FACTORIES.

THE air is full of rumors regarding new rubber-shoe plants that are to be built in various parts of the country. While many of these rumors have no basis in fact that can be discovered, there are others which seem to embody a certain amount of truth and it is possible that in time some new rubber mills may be expected. A report that a new rubber factory is to be started at St. Johnsbury, Vt., has gone the rounds of the newspapers very generally. It appears that a Mr. Darius Banks of South Boston, after corresponding with leading citizens of St. Johnsbury in regard to establishing a rubber mill there, has visited the town and submitted a proposition looking to the investment of some $25,000 in a mill, on the condition that enough capital shall be subscribed locally to increase the amount to $100,000. Mr. Banks is reported to be the son of a man who was for years connected with the India Rubber Comb Co., at College Point, L. I. He is the inventor of some kind of a hard-rubber sole or heel and has lately been employed by the General Electric Co., at Lynn, Mass., in running a machine for making shoes.

Another rumor credits a large English firm of rubber-manufacturers, who certainly have money in plenty, with sending a man to America to look up a good site for a rubber-shoe factory. Our informant tells us that one will certainly be built within a year or two. Another report is that the General Electric Co. have sold one of their large buildings in Lynn to be used as a factory for rubber shoes. Still another rumor is to the effect that the city of Fitchburg has been selected as a proper place in which to manufacture rubber boots and shoes, and that Boston and Fitchburg capitalists are already looking at a plant there for this business. New Jersey parties report a feeling among capitalists down there that at the present stage of the game a rubber-shoe factory might be installed that would pay a good profit, and that the question is now being earnestly canvassed.

With all these various reports in the air, it is of interest to talk with the gentlemen already in the rubber-shoe business as to the possibility of the new factories being started, and regarding the best places. One of them, speaking of the different reports, says that St. Johnsbury or Fitchburg are very far from being ideal places for an enterprise. To quote his own words:

"If I were to start a mill I would put it right on the top of Boston Post-office, provided I could; if not, I would locate it somewhere in South Boston. Then you have plenty of help and at fair wages, and you are right in touch with the best shipping facilities for the whole country. If I were not to locate in New England, then I should go to Philadelphia, which has always been called 'the poor man's home,' and where you can always get help cheaper than anywhere else in the country. The people cannot get away and so have to stay at home and take what they can get. Besides, shipping facilities and cheap coal make Philadelphia specially attractive."

NEW PUBLICATIONS.

THE STATE OF CEARÁ: BRIEF NOTES FOR THE EXPOSITION OF Chicago, as Authorized by the Governor of Ceará, Brazil.—Dr. Jose Freire Bezerril Fontenelle. Chicago: [E. J. Campbell] 1893. [Cloth, 8vo. 101 p., with map and plates.]

TAKEN as a whole the people of Brazil probably were not excelled by any other nation in making the most of the opportunities offered by the World's Columbian Exposition to advertise their country favorably. Handbooks descriptive of Pará and Amazonas, distributed freely at the Fair, have been mentioned already in this journal. The one now before us, treating of Ceará, is not less attractive in appearance or interesting in its contents. The State of Ceará is farther down the Atlantic coast than Pará, the State of Maranham intervening. Though settled before 1600, its commercial and industrial development can scarcely be said to have begun before the present generation. Its agriculture still remains, for the most part, in the most primitive conditions. Of late, however, Ceará has had communication with the outside world by means of steamship lines and the telegraph; railways are being built, and the growth of coffee and cotton is assuming good proportions. The rubber industry is also becoming important, the gum exported being that known in the New York markets as "mangabeira" rubber. In subsequent issues of this paper some extracts from the Ceará handbook may be expected.

THE INDIA-RUBBER INDUSTRY IN AMAZONIAN PERU.

By H. Guillaume, F. R. G. S.,

Consul-General of Peru at Southampton, England.

THE recent immense development of the India-rubber industry has been the means of bringing to light the hitherto obscure regions—the *terra incognita*—of South America. This region, comprised within 7° and 15° South latitude, and between 63° and 75° longitude West of Greenwich, is the southwest district of the great Amazonian basin, and embraces in fact the whole region between the river Madeira (the limit of Brazil) and the Peruvian cordillera. Here along the banks of the Purús and its tributaries, the Ituxy and Aquiry or Acre, the Madre de Dios or Amaru-mayu, the Abuna, the Orton or Tahuamanu, the Beni, and the Madidi,—besides the Ucayali and its great tributaries the Pachitea, Tambo, and Urubamba,—are to-day employed an army of rubber-gatherers, who are adding steadily to the debt which geography already owes to commerce. Rubber has been almost the only stimulus to the exploration of the Amazonian network of rivers, and, strange though it may seem, it is a fact that the United States and England, the largest manufacturers of the crude product into articles of commerce, have hardly any footing whatever in the great industry of rubber gathering.

PERU'S RUBBER-BEARING RIVERS.

MUCH of our information on the little-known Purús, Ituxy, and Madre de Dios rivers, and the region between the latter and the Aquiry, which is traversed by the Orton and Abuna, we owe to Colonel A. R. P. Labre, and the accompanying map was compiled from information which he communicated to the writer. He explored the river Ituxy several times and took two steamers up to the mouth of Curykethe, 200 miles from the Purús, and established several rubber stations there. On that occasion he received great help from the Hypurina nation in constructing a road to reach the Beni river, but was unsuccessful, owing to the hostility of the Indians when near the Abuna river. He then, in 1887, undertook a journey for the purpose of crossing overland from the India-rubber stations on the Madre de Dios to a navigable point on the Acre, tributary to the Purús. He ascended the Madeira from the Amazon, and a lively idea of the difficulties of this route—the only one by which the now considerable trade between the Amazon and Bolivia is carried on—is furnished by the fact that it took him, traveling with a well-equipped party of Bolivian traders in four canoes and two light boats (*montarias*) thirty-four days to accomplish the distance of 161 miles between San Antonio, at the foot of the long series of falls, and the town of Villa Bella, at the mouth of the Beni. Nine formidable falls or rapids had to be passed by unloading the canoes and dragging them overland on wooden rollers. To pass round the Ribeirão falls alone, a distance of three miles, took them eight days. The cost for the transit of goods past these obstructions at present is from 35*s* 6*d* to 52*s* 4*d* per arroba (25 pounds).

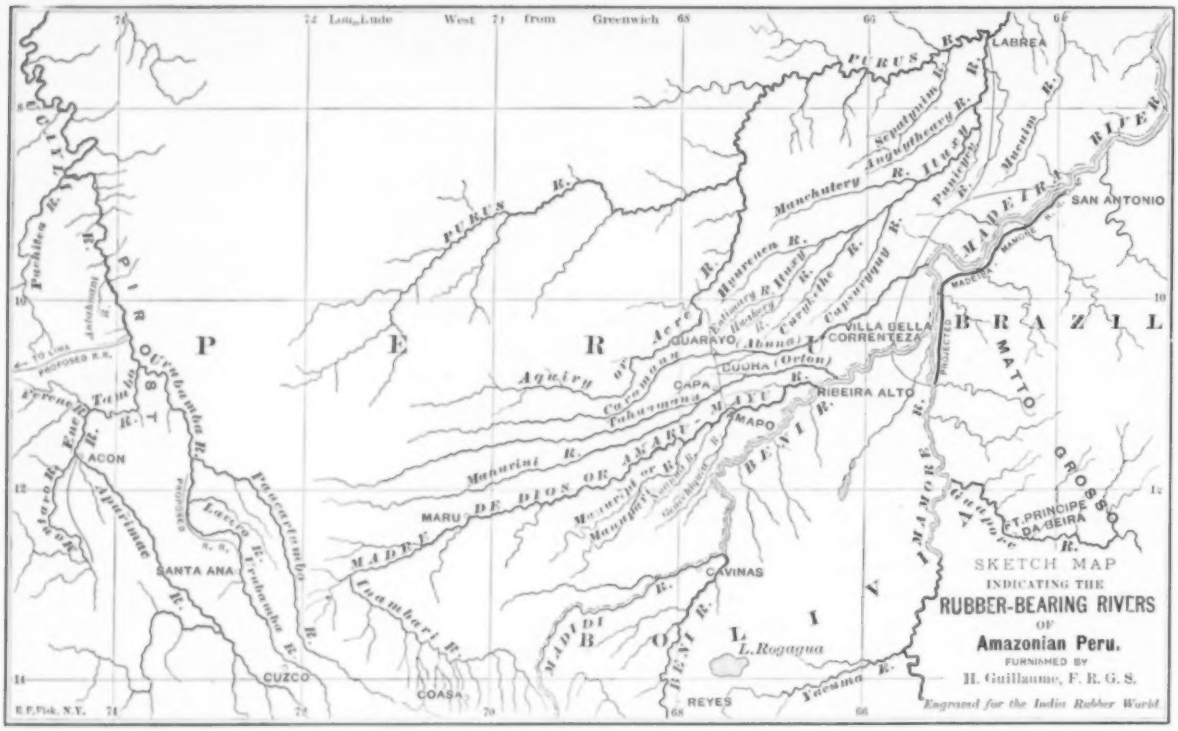
Colonel Labre ascended the Orton in 1887, and passed a month on that river, which is navigable for fifty miles by steamer. There is a rubber station on its banks belonging to Dr. Antonio Vaca Diaz, a Bolivian Senator who employs over 300 laborers. It may be noticed that the rubber trade is chiefly in the hands of Bolivian merchants, who first established themselves on the Madre de Dios in 1883, and on the Orton in 1885. Colonel Labre commenced his overland journey on August 11, starting from Maravilla on the Madre de Dios, with a party of eighteen of his own men and eighteen Indians of the Araona tribe. On August 14, he crossed the Orton at the port of Budha on rafts furnished by the Araonas, the river being here 264 feet wide. He arrived at the river Abuna or Caramanu,* on August 24, and rested at the Guarayan crossing-place, where the river is 100 feet wide. He found the river clothed with a most luxuriant forest abounding in India-rubber, cacao, and Brazil-nut trees. On August 30, they reached the banks of the Acre, where the settlers at Brejo de Ponte manifested the greatest joy at his success, which had opened a route of communication between the north of Bolivia and the Amazon, avoiding the costly transport of the Madeira rapids. Here Labre visited the rubber settlements of Manoel Joaquim and also that of Senor Geraldo Correia Lima, of Flor de Ouro. The distance from Maravilla to Flor de Ouro is ninety-two miles and the construction of a railway would be attended by no difficulties.

On the Madre de Dios there are 3000 gatherers occupied in the collection of rubber, the season for which lasts six months, and sometimes longer, according to the season, the collection being suspended from August until January. The Indians who occupy the Madre de Dios and the Madidi are the Toromonas, a very numerous tribe, some of whom are very fierce and others peaceable toward the white man. The Guarayos, who navigate the head-waters of the Madidi and Madre de Dios, are very fierce and are at continual war with the other tribes. As far as can be ascertained, the annual yield of rubber of this region, is:

	Kilograms.	Pounds.
River Purús	2,000,000	4,400,000
River Acre	500,000	1,100,000
River Beni	400,000	880,000
River Ituxy	20,000	44,000

The yield of the Madre de Dios and Abuna is unknown, but the production is yearly increasing and must soon reach 1,000,000 kilograms. The trees are the *Hevea Brasiliensis*, and under the equable climatic conditions attain the height of from forty to eighty feet. It is erect with smooth, grey bark, and thick, glossy leaves. The milk, collected in small tin cups, or tubes of bamboo called *tichelas* and holding each half a pint, resembles thick yellow cream,

*Caramanu: cara=seringa; manu=river.



which when collected is smoked by the burning of an oily nut (*Attalea Humboldtiana*) in layers on a wooden mold. The *Hevea* trees are found in groups of 100 to 500, near the rivers and in the low-lands. A peon will puncture 150 trees in a day and obtain 5 kilograms of sap. Trees which yield a large quantity of sap often die the first year; some yield 8½ gallons, and some only two gallons. During the wet weather the juice cannot be collected or is spoiled, but during the six dry months the rainfall is very slight. Observations made on the Beni and Madre de Dios showed only twenty-five days on which rain occurred from April to September, against ninety-eight days during the wet season. The dry season is the coolest. The average temperature then is 24° Cent. (or 45° Fah.), while during the remaining part of the year the average is 26° Cent.

IQUITOS AS A RUBBER PORT.

ALL the rivers mentioned so far send their products direct to Manáos and Pará, which fact is responsible for the existence of the former flourishing city 1000 miles distant from the mouth of the Amazon, entirely dependent upon the one staple of rubber. Messrs. Braillard & Clausen have a steam-launch trading on the river Beni; Don Antonio Chavez, a Bolivian merchant, has a steamer trading on the Mamoré; Don Augusto Roca has one on the Madre de Dios, and Don Antonio Voca Diez is about to establish a steamer on the Orton. The Madre de Sivo is already found navigable for steamers for 250 miles. The remarkable growth of the rubber trade has led to the invasion of the forests of the upper Amazon,—the Marañon and its tributaries,—by the collector, and from these regions is now annually exported through the port of Iquitos caucho worth $550,000 and fine rubber worth $170,000.

Iquitos is the capital of the immense Peruvian Amazonian Department of Loreto and the seat of the government. From here start all the rubber expeditions,—it being the only commercial center of any importance in the caucho region,—after being equipped upon the rotten system of credit which prevails over the whole country. The rivers visited by the gatherers are the Ucayali, Huallaga, Pichis, Pachitea, Tambo, Ene and Perene, the Javary, Napo, and others, where both caucho and the *Hevea* species are found. While the latter variety is found in groves, the search for the former is a more hazardous venture, and the *cauchero* is lost sight of completely for three to six or more months. He has a long and tedious canoe journey and finds himself high up the Napo, probably about Aguarico in Colombia, or low down southwest on the Pachitea affluent of the great Ucayali, as either venture or foresight has guided him;—either will suit our purpose.

His first care is to erect a temporary shelter, and then he makes excursions into the depth of the forests. Should he be so fortunate as to come across a fair number of trees within a certain radius, he sets about making himself a proper *tambo*, or native hut,—cane-built and palm thatched—and installs himself, plant, and assistants, and gets to work in good earnest. The root of each tree is operated on first. Deep perpendicular or oblique gashes are made upon it, and small reservoirs of forest leaves ingeniously sewn together are placed beneath the cuts, into which the juice slowly distills. These cups of leaves are much better for collecting the sap than the tin basins placed on the ground beneath the cuts, inasmuch as small pieces of bark, twigs, dirt, and other foreign substances get mixed with the trickling liquid and deteriorate it considerably. After

the sap has ceased to flow from the root, the tree is felled, and a series of incisions made along the trunk at distances of about three feet apart, and the juice collected as before. The small cups are emptied into buckets, and when a sufficient quantity of sap is obtained, it is poured into a rude hole made in the ground with an utter disregard for the dirt which closes in with it. The liquid caoutchouc, if thus left to itself, would coagulate in about a fortnight, but it is necessary to bring about the solidification as speedily as possible, else the heavy rains which fall in these regions would wash out the liquid and entail considerable loss. To effect this coagulation some extractors employ pure lye, others soap, and some few a mixture of soap and a decoction of *Bejuco*—the juice of a creeper—which is stirred rapidly in the liquid rubber, solidifying it *ad instanter*. Formerly the slabs thus prepared, owing to both carelessness and fraud, contained a considerable quantity of extraneous matter, and sometimes resource was had to the various gums, more or less elastic, which are more easily collected than the rubber, of which the best known are the "leche guayo," "leche caspi," "leche caymito," and the "cauchu masha." The latter term signifies "brother-in law" to the caoutchouc, an Inca term naively expressive of its close resemblance to the genuine article. These practices will explain the bad repute which first obtained for the Amazo-Peruvian product, but the low value which it fetched in the market has taught the collector the necessity for honesty in its preparation, and now the coagulation will be effected solely by means of the *bejuco* juice mentioned, and make it a rival of fine rubber.

The population of Iquitos is only 8000, but the labor which gathers the rubber harvest is largely Indian. The principal houses engaged in the trade on the upper Ucayali, inhabited by the Piros and Conibos, are Cardoso & Co., whose firm carry on trade with more than 2000 Indians extending from the source of the Yavari on the east to the confluence of the Ene with the Tambo on the southwest; Linares & Co. carry on trade with the Indians on the rivers Morona and Pastaza, and Don José de la C. Vasquez trades with those on the rivers Santiago, Njeva, and Potro. Señor Mezia and family have established themselves on the Palcazu, and a German named Carlos Gans at the mouth of the Mayro. Messrs. Baez, Aladin, Vargas, Garcia, and others are established on the right bank of the Pachitea. All the traders live peaceably with the Indians, visit their habitations, and travel with them alone on the rivers and into the depths of the forests. Some of the tribes, however, fight among themselves and carry off the women and children as booty, which they bring to exchange, the same as their rubber, with the whites. These are often sold between merchants at a price ranging from $100 to $200 and a good Indian is of great service to his *patron* in his dealings with the tribe; they seldom run away and leave their owners.

Major J. Orton Kerbey, late United States Consul at Pará, traveled last year across equatorial South America, from Pará to Lima,* making the journey on the Huallaga in canoes. He is of the opinion that eastern Peru is as rich in rubber as all of Brazil, and moreover it has the advantage that it has yet to be exploited. He considers it "the finest belt of country on the earth, in the rubber richness, gold, cocoa, and products for the *materia medica*." Major Kerbey intends publishing shortly an account of his travels, which, by the way, he means to repeat the coming year via the Ucayali, with the intention of showing that there is a golden harvest for American enterprise to reap in these regions. Being a keen observer, he naturally finds that a rubber plantation in Peru is a richer and far more certain source of money than a gold-mine, since from every gallon of milk collected a pound of rubber worth 75 cents to $1 is coagulated.

*The letters contributed at the time by Major Kerbey to THE INDIA RUBBER WORLD will be remembered with interest by our readers.—THE EDITOR.

RUBBER-PLANTING DISCUSSED.

OWING to the reckless sacrifice of the trees and the ever increasing demand for rubber in manufactures, the time will arive when the natural supply of the valuable product will be miserably inadequate for the world's uses. More especially is this great mischief wrought in the felling of the *caucho** trees, which grow in the most unhealthy and inundated parts, which can be entered only in the dry season, for though the caucho-trees increase and multiply with comparative quickness, they are never found together in considerable numbers, and the *cauchero* therefore fells it on the spot and obtains the whole of its sap, while in the case of the *Hevea* species, found in groves, he only taps the tree, which he is again able to take from at the next harvest.

At a meeting of the Society of Arts in London it was stated by Mr. James W. Wells, M. Inst. C.E., F.R.G.S, that 1000 acres could be planted with a capital of £40,000. The trees would have to be planted thirty five feet apart, giving thirty-five to the acre, or a total of 35,000 trees. The trees commence to yield at the end of six years, but ten years are required for them to attain full maturity, after which a minimum of 16 pounds of sap could annually be extracted from every tree, without the slightest injury to it. The gross yield would therefore be 560,000 pounds of rubber, or 250 tons of the value of £70,000. In such a plantation, one man can collect 50 pounds of sap daily and turn it into rubber; consequently the labor required would be 100 men working 112 days. Ten shillings per day each would bring any number of the natives fitted for the work, making the cost of gathering £5600, and estimating management and all expenses at say £10,000, there would be left a profit of £60,000 per annum. The cost of clearing land, planting it with trees, erecting houses, sheds, etc., should not exceed £30,000. The capital mentioned would be more than sufficient, therefore, and the return at the end of ten years should be 150 per cent., which could be further increased by planting cocoa between the trees, which would commence to yield in four years and reach maturity in nine, when it

*[The two chief varieties of rubber obtained from the Amazon and its tributaries are the "borracha"—the product of the Seringa tree—and the "caucho" of Peru. The Seringa is gregarious in habit, but the Caucho is scattered solitarily through the forests.—COURTENAY DE KALB *in this journal, June* 15, 1890.] The tree here referred to as the Seringa is that of the genus *Hevea*, formerly known to botanists as the *Siphonia*, and produces the fine rubber of Pará. —THE EDITOR.

would yield a profit of about 100 per cent. The above figures show that an amount equal to the present output of rubber from the whole of the Amazons could be produced from 65,000 acres thus planted, while the enormous area over which the collectors now roam is almost incredible. They cannot on an average gather more than 20 pounds of sap a day and are employed for about 90 days, which, allowing 10 per cent. for deaths and sickness, gives us the present number of gatherers at about 23,000.

THE TRANSPORTATION PROBLEM.

THE introduction of India-rubber into India has not been attended with the success expected of it, but here, in its native home, it cannot fail to realize an immense profit to the planter, owing to its quick growth and rapid replenishment of its sap after tapping, compared with the results given by it when transplanted to Assam, where it was first bled at twenty-five years and then could give only a moderate yield when tapped at intervals of three years. In the near future the cultivation of rubber will be absolutely imperative, and to those who engage in it to-day will accrue a surer and larger profit than from any other known culture.

In all references to the India-rubber trade the question of transportation is a vital one, and here there is also a field in which money is to be made. Previous to the gradual transfer of the rubber business from the lower to the upper Amazon, this was generally well provided for by the Amazon Steam Navigation Co., Limited, an English corporation subsidized by the Brazilian government and flying the Brazilian flag; by the Booth line, from Brooklyn, making monthly trips to Manáos, and also many steamers privately owned. The Amazon Steam Navigation Co. also has a monthly service to Iquitos, and occasionally sent a steamer beyond to Yurrimaguas. The Loreto Department of Peru, however, has become a bustling busy community with its new product, and the government of the Department has devoted itself with much zeal to the question of transportation facilities. At present, the whole of the rubber dealt with on the Iquitos market has to be sent to Manáos for shipment to Europe and America, with the consequent loss of transhipment in the Brazilian port. In order to hold the ascendency of her own trade the government has offered favorable terms to any company who will give eastern Peru a direct service with the outside world.

Article 1 of the law of November 14, 1890, says: "The Department of Loreto will expend the sum of 12,000 soles annually as subvention to any company of steamers that will make from three to six voyages direct between Liverpool and New York and Iquitos, calling at Havre, Lisbon, Pará, and Manáos." Article 2 reads: "For each voyage will be paid 2000 soles."

In a country where all the highways are rivers it is most natural that the trade should have been carried on by canoes, but its rapidly increasing importance has demanded from the larger traders the introduction of steam-launches, of which about eighteen are owned by private firms in Iquitos, all constructed to use wood fuel, which they obtain for the gathering. These boats, in which their owners live, are in fact shops, and in many the goods are displayed tastefully on shelves, but the chief stock in trade consists of such provisions as the rubber-gatherer requires, a large supply of rum or cachasa, cheap clothing, guns, ammunition, and trifles for the Indians. On this point, Major Kerbey says that many of the launches are totally unfit for the work they are engaged in, being in fact more like English harbor-tugs, and the innovation of good American river-boats, strongly built and very light draught, stern-wheelers for preference, cannot fail to pay the owner. Those in use have but one deck, which is so low that a person cannot stand erect, with the exception of an elegant launch of French build which has a small hurricane-deck, but she draws too much water for summer work.

The Peruvian government, in furtherance of its internal river navigation, on October 20, 1892, approved of the proposal of Messrs. E. Berninzon & Co. to provide a service of steam-launches to navigate the rivers Ucayali, Pachitea, Palcazu, and Pichis, of not less than fifty tons register and a speed of ten knots. In return for a subsidy of 8000 soles for ten years they will guarantee a bi-monthly service between Iquitos and Yurrimaguas, and a monthly service between Iquitos and the Pichis; they will also receive a grant of 1500 hectares of land for a site for a port on the Pichis suitable for cultivation, with permission to erect factories, etc.

One feature of the India-rubber trade in Peruvian waters must not be overlooked,—the ability to reach the head-waters of the Marañon from the Pacific coast, by the Central railway to Oroya, thence on mule by way of the Chanchamayo valley to S. Luis de Shuaro, and from there to the Pichis, the distance being 165 miles from Oroya and 290 miles from Callao. More easily reached from North America than from Europe, it is a field where American enterprise should predominate, and when we consider that the United States is the largest purchaser of rubber, the absence of Yankee competition is a source for regret.

The United States is in a position to enter this field under many advantages, foremost of which may be mentioned, in the carrying trade, her vast superiority in the construction of stern-wheel vessels for river navigation, which have been greatly perfected in her own waters. Again the States can supply a great amount of the total imports to Iquitos, which are comprised principally of provisions and edge-tools. The latter market, indeed, she can have all to herself. It being the great desire of the Loreto Department to free itself from the tutelage of the Pará merchants, the American will find a warm welcome in these waters, and whether he engage as merchant or trader, he has here as bright a future as any other part of the American hemisphere can offer,—a healthy and agreeable climate, and, in addition to a certain competence from rubber alone, he has a selection of natural products, unequaled and almost unlimited, for which the markets of the world are ever open. Coffee, cocoa, and tobacco are easily cultivated by traders on the upper tributaries of the Marañon, while a large quantity of vegetable ivory, copaiba, oils, gums, sarsaparilla, and piassava are annually bartered for with the Indians and exported.

A LADY AMONG LONDON RUBBER-STORES.

By Mrs. I. A. Sherman.

LONDON, November 15.—In this city of great distances rain seems almost to fall each and every day in the year, and one has to go continually equipped with mackintosh and rubber shoes, or else to trust to the good nature of the owner of a near-by shop for temporary and frequent shelter. This shelter is not always freely granted, for the British small shop-keeper is inclined in his struggle for existence to sacrifice gallantry to surliness, an instance of which was given to my poor self when I rushed in haste to one almost begging him for permission to remain during a sharp shower. His reply I will not soon forget. He said in a very matter of fact sort of way that it might rain for half an hour, and that he had no room for me that length of time. Imagine the princely store-keeper on Broadway saying that!

The rubber-stores here are as fond of window and interior display as in New York. One would hardly know by their appearance whether they copied us, or we them. The assortment and display of mackintoshes are large and fine. The British manufacturer has to cater to the whole world and to provide for every clime with all the variety of temperature that would imply. Then the wealthy classes here are fond of sport, and that calls for a large variety of rubber goods. This is true in other goods than clothing, for the waterproofers' store has its well-appointed stock of boats, canoes, bath-tubs, and camp paraphernalia.

In shoes I have found, so far, plenty of Woonsockets. But have they been enlarging their works? If so, was it to build plenty of large sizes for the export trade? Bless me if I could find anything less than an 8 at the West End. I presume that smaller sizes are to be found somewhere in London, but they surely have to be hunted. The trade can hardly be said to run to style in shapes, and as for prices, when we expect everything cheap, they are no lower than in America. After all, why should they be, for they come from there?

There are many novelties here as in America, but one is struck forcibly with the matter-of-fact English names. In America we spend some time in sugar-coating the names of our goods, but the Englishman blurts it out with his "Traveling Hold-All," his "A. W. Pack," "Autumn Maneuver Bag," and so on. There is a regular business here in the hiring of water-beds. One costing £8—size 36x72 inches—is rented for ten shillings for the first week and seven shillings per week thereafter, the value of the bed being deposited, with a guarantee being made that the bed is not to be used by any one with an infectious disease.

In packing, hose, and the like such stores are miles away, in the manufacturing centers, and I have had no opportunity to visit them.

The best makers of English waterproofs and mackintoshes are reconciling themselves to the idea that the contour of the garment shall closely fit the gown and neither must be at the bottom more than five yards in circumference. The gown has a hoop of aluminum gathered into it, fitted on the inside, and then carefully concealed, and because of its graceful support, a mackintosh man has followed out the same idea. A few waterproof garments can be seen in the London shop-windows embodying the inventive taste of the Paris modiste who first gave the point to her London sister, and who really had more need of it than she.

In buying some gloves in a little French shop on Oxford street, near Marble Arch, I found a unique article made of rubber, and I doubt whether it could be found in the United States. It was a glove-cleaner with a rubber back, shaped as other hand brushes are, in dimensions two by four inches. To this was attached the cleaner, made of porous rubber. In this porous rubber benzine had been thoroughly impregnated;—the shop-keeper said that it had been boiled in. Perhaps that was so, but my experience has taught me not to trifle with benzine near a fire. This benzine, however, does not evaporate but simply wears off with the porous rubber, as the gloves are cleaned. The woman in the shop claimed to have a monopoly of it in London, and I will not dispute her claim by hunting for it elsewhere in the labyrinth of streets common to the city. We only paid 6½*d* for it, and so far it is a treasure.

In traveling on the "busses,"—and we always like to ride on top,—we find ourselves all at once under a gentle shower. We cannot run away from the rain, and we cannot find a seat at that moment inside. But there is attached to each seat a rubber blanket—something like what is used in the army—and with this we cover ourselves as best we can, and ride out the storm. Everywhere London seems to be a great place for rubber, or anything impervious to water.

AMAZONIAN RUBBER IN "FIRST HANDS."

By Mrs. M. F. Sesselberg.

IN a series of sketches entitled "In Amazon Land" Mrs. Martha F. Sesselberg, of Pará, portrays entertainingly the manner of life in the rubber country. A short chapter in her book gives an idea of the first step in the movement of crude rubber, the same experience being repeated in such a great number of instances every year as to yield many millions of pounds of the product, reaching in the end every town and village onthe globe. The sketch follows:

IMPELLED more by the force of the tide than any impulse given to the great oar, José reached the bridge of the settlement. He carried with him a great "mold" of dark brown rubber, which with his own hands he had gathered

and made. And in the good old-fashioned style, by slowly smoking the milk of the rubber tree over a smoldering fire, fed with the hard nuts of the *tucumá* palm. . . . Now in the great rubber emporium, Pará, the soul of the princely rubber merchant is grievously vexed at the tricks civilization has taught many of these rubber-gatherers.

Balls of clay, sand, and what not, are introduced into the *pranchas*, or "molds," to increase their weight. To augment the quantity of milk sap from other trees is mixed. And worst of all, to avoid the tedious process of preparation, the *seringueiro* (rubber-gatherer) makes a blazing fire, and when the milk is liquid, puts in a kind of flour, and if this causes it to coagulate too quickly, acid-like lemon is added, to prevent its consolidation. Consequently, the purity of fine rubber is greatly damaged.

But back again to the settlement. The principal trader therein was a keen witted Portuguese, whose dwelling and store were in one rude habitation. The *seringueiro* approached the heavy, old fashioned scales, and putting the "mold" on, the rusty balance weighed out ten kilograms (20 pounds). The trader kicked it out into an inner room, cheerfully remarking to his customer, six kilograms—four goes out for *quebras* (loss.) The *seringueiro* never reclaims against such a decision, in reality a shameful extortion.

Not alone in *quebras* is he cheated, but the purchase of the merest necessities of life, and above all in the price of rubber at the capital.

When the poor man wishes to enter into business secrets, the trader reads him an invoice from an account current of the patron at Manáos or Pará, always ending up with the ominous word—exchange.

The rustic is credulous by nature, and when he hears the word exchange he is struck dumb. To him it is the synonym of an all-powerful being, who in another world orders the rise or fall of rubber.

The trader walked to the counter, wetted his pencil with the tip of his tongue, and taking therefrom a piece of coarse brown paper, said, "Good; what do you want this time, José?"

Then commenced the transaction. Cachaça, or rum, candles, sugar, tobacco, matches, etc. All noted down against so much rubber. As the *seringueiro* never has a balance at the trader's—always a debit in his books,—this fact, as a usual matter of form, was mentioned.

And with a *boa noite*, and promising a speedy supply of other rubber "molds," José started on his way. But this time against the tide, and each stroke of the great oar resounded through the air like thunder!

And it being St. John's eve, over the bonfire built round his hut, he jumped the usual three times for good luck!

THE CITY AND STATE OF PARÁ, BRAZIL.

THE city of Pará has far more to commend it to the interest of the world than the single fact that it is first among rubber markets. With the rest of Brazil it is rich in history and tradition. Its civilization is as old as that of New England, not counting that prehistoric development which has made South America a charmed land for the modern explorer and archæologist. In his work "The Amazon and its Coast" Herbert H. Smith writes enthusiastically of Pará: "A city this is with a manifest destiny: a city of the future that shall yet enrich the world with its commerce. Some time, who knows it, it may be the true metropolis of the world. I can suppose that. Rio de Janeiro is far removed from the commercial world, a good five thousand miles from New York, and farther from Europe. Pará is nearer by almost half that distance; if it has not the harbor of Rio it has what the southern city lacks,—splendid water communication straight through the heart of its continent; and this valley, if people did but know it, is the richest part of South America. Pará has her title of nobility; by her situation she is queen of the Amazons!"

There is no other stream to be compared with that king of rivers which takes its name from the early Spanish legend that in the interior of South America there existed a nation of fighting women—the *amazons*. Under the inclement sky of Puna, in the fastnesses of the Andes, there trickles from a cold lagoon a tiny stream of water which in a winding direction crosses a high plain of sickly and withered shrub. Running northward this stream takes the name of Tunquragua, fertilizing the smiling valley of Huantar in Peru. Under the name of Marañon it is known in the Peruvian provinces to the eastward, while from the Peruvian frontier through Brazil to the mouth of the river Negro it takes the name of Solimoes. Thence until it reaches the Atlantic ocean it is called the Amazon. This river receives in its course the waters of a hundred other rivers, emptying the greatest hydrographic basin on the globe. Its delta forms an entrance to the ocean one hundred and fifty eight miles wide. Such is the force of the stream that its current is felt two hundred miles out in the ocean, while the tidewater has its effect four hundred miles up stream. Such is its depth that it might be navigated in every season of the year by the largest steamers of the Cunard line throughout the breadth of the Brazilian republic. This is the natural transportation system of which Pará is the chief port.

The foundations of the city of Pará were laid in 1616 by the Portuguese commander Francisco Caldeira Castello Branco, who went at the head of an armed force to wrest the lands of Pará from the occupancy of the French, who were there in violation of a treaty with the Portuguese sovereign. The history of those days is an unceasing story of depositions of governors and intrigues of colonists. Castello Branco himself was deposed, imprisoned, and sent to Lisbon. Until 1641 Pará was under the government of Maranham, but in that year became an independent province, with a governor. Standing alone the new province became an easy prey to the Hollanders, but they in time voluntarily abandoned the country and Pará for a while went back to the dependence of Maranham. In

1649 the General Commercial Company of Brazil was organized in Portugal, and for seventy years held a monopoly of the commerce of the Amazon, on the condition of defending the territory against foreign invasion. For this purpose alone the company organized a navy of thirty-one ships, armed and equipped at its own expense.

From an early date a spirit of independence was rife in Pará. Thus the people of that section were jealous of the power at Maranham. By 1700 Pará was the first market of Brazil; cacao, vanilla, and indigo were gathered and exported, and coffee was planted; cattle raising was commenced on the great island of Marajó; a state militia was organized; metal coin was brought into circulation instead of fibers of cotton and cacao fruits, which formerly had supplied the place of money. In 1721 a custom-house was organized and a board of public health; in 1725 a Roman Catholic bishopric was created at Pará, and in 1745 the seminary of Pará, which is still in existence. Three years later was laid the foundation of the famous cathedral, which has become the most sumptuous Christian temple in all Brazil.

The great scientist La Condamine arrived in Pará in 1741 on his return from a commission in company with French and Spanish astronomers for the purpose of taking observations to determine the real form of the earth. He made scientific analyses and wrote important works concerning the region, giving information to Europe of the principal natural products, including *India rubber*, which up to that date had been unknown.

In 1767 the State of Amazon was separated from that of Pará. The first census of Pará was taken in 1800, when the total population of the province was 80,000, of which 12,000 belonged to the capital. To-day the State has a population of 500,000, and its capital 70,000.

With the removal of the court of Don John VI. to Brazil, Pará was elevated to the rank of a province of the United Kingdom of Portugal, Brazil, and Algarves. Progress was made in government, commerce, and industry. Brazil became independent of Portugal in 1822, but the province of Pará did not join enthusiastically in the support of the central government, fearing a loss of individuality. A member of the local government started in 1821 the first daily newspaper in the city, named *O Paraense*, which brought to life the first germs of republicanism. Two years later the local government, intimidated by the presence of a man-of-war, acknowledged the independence of Brazil and the government of Dom Pedro I. But from the beginning the government of Rio, to satisfy the ideas of self-government manifested in Pará, gave to the presidents of that province the greatest of possible exercise of power. The spirit of republicanism grew up to the date of the formal establishment of the republic, in 1889, and its proclamation in Rio de Janeiro. Earlier in that year Count d'Eu, in a voyage up the Amazon, had searched in vain for one adherent to the throne.

The State of Pará is the most northern of the United States of Brazil and occupies a vast region. Its territory is estimated at 443,896 square miles, comprising one-seventh of the Brazilian territory and one-thirteenth of the surface of South America. Not only is there such a vast area, but the natural resources are believed to be capable of supporting half the population of Europe. Yet the population is more sparse than that of Iceland, being only about 1.11 per square mile.

India-rubber represents nearly two-thirds of the total value of production of the State of Pará, and contributes to the State and municipal revenues 25 per cent. of their total amount, with neither loss nor impoverishment to the producer. There are many other valuable products of this State, the export of which, largely to the United States, is constantly on the increase, and the foreign trade gives employment to a number of important steamship lines. The Amazon Steam Navigation Co., Limited, operated with London capital, has a fleet of twenty-nine steamers, whose combined trips last year on the Amazon and its tributaries amounted to over 500,000 miles, one of the lines communicating directly with the republic of Peru and others indirectly with Bolivia and Venezuela. Its income has increased from 34,205 milreis in 1853 to more than 4,000,000 milreis last year. The Maranham Coast Co. employ five steamers, and the Lloyd Brazileira employ twelve steamers, all for interior navigation. The Pará and Amazon Co. employ eight paddle-wheel steamers. The steamers of the Booth line, established twenty-five years ago, navigate regularly between Pará and Manáos and New York and the principal European ports. Ten steamers are employed. Besides, the Red Cross Line and the United States and Brazil Mail Steamship Co. employ together fourteen steamers for ocean transportation, and the Lloyd Brazileira seven steamers. The book "The State of Pará" enumerates five banks established in Pará, besides branches of English banks. There are also two local insurance companies, the Grão-Pará Water Co., a paper-factory, telephone company, a street-car line using American cars, the Pará Gas Co., a cold-storage company for preserving meats by the freezing system, and many other corporations either projected or in operation.

It is predicted that sooner or later Pará will become an important industrial country. Already sugar-mills, brick-making machinery, and steam saw-mills are in operation. Pará has 101 sugar estates, thirty-six steam saw-mills, and thirty-five brick-yards. There are also soap-factories, oil-factories, and various sorts of shops and foundries in the city of Pará. In the State there are forty-one printing offices and thirty-two newspapers. During the past year there were constructed in the city of Pará more than 700 dwellings.

Popular prejudice, to quote from "The State of Pará," has always been very great against the climate of this region, considered by many to be the focus of malarial fevers. Passages are given from numerous writers to show that the climate is very much more moderate than might be supposed from the nearness of the city of Pará to the equator. Herbert H. Smith writes: "At Pará, it is true, people complain of the sultry days, but you shall see a dozen more sultry ones during August in New York; 90° F. is about the highest temperature of sunny afternoons, and the evenings are delightfully cool."

RUBBER SHADE FOR COFFEE PLANTATIONS.

By F. O. Harriman, C. E.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The communication from Señor Romero in the issue of your journal for October 15, on the subject of planting rubber and coffee in conjunction, contains ideas so detrimental to the coffee interests of the isthmus district that I feel bound, though not wishing to take issue publicly with Señor Romero, to say something further in the same connection. The eyes of the world are fixed upon the isthmus of Tehuantepec as a connecting link in the highway of commerce between the Atlantic and the Pacific, and its consequent advantage of soon being within easy reach of the entire world; and coffee-growing is daily becoming more and more important in the development of this section. As I have tried to point out in your pages heretofore, India-rubber may be made a factor in profitably extending this industry. Hence my continued attention to the subject.

Coffee, wherever planted on the isthmus of Tehuantepec, and also on the foot-hills and Atlantic plains of the States of Vera Cruz and Tabasco, requires shade; even the old plantations of the Cordoba and Jalapa districts were shaded to a greater or less extent, and at present, even in these altitudes, much rubber will be found for this purpose.

From "*The Mexican Trader* Handbook No. 1—Coffee-Growing in Mexico, by J. P. Taylor," I quote as follows (p. 26):

"SHADE.—According to Mr. Hugo Finck, the coffee-tree requires shade up to the altitude of from 3000 to 3500 feet above the level of the sea. From 3500 to 5000 feet, shade is not absolutely necessary, although the coffee-trees which have it live longer, but their product is less. At Cordoba, Jalapa, and other districts in the State of Vera Cruz, the banana-tree is the favorite one for shade, but, as Mr. Finck says, it is a tree which so rapidly exhausts the soil that coffee-trees beneath it do not bear more than eight to ten years. Mr. Julio Rossignon gives it as his opinion that the method which some planters employ of shading their coffee-trees with bananas is a bad one. The banana, while it maintains humidity in the soil, takes too much of the richness out of the earth. On the other hand, in the return rendered the government by the city council of Jalapa, the banana is recommended as the best tree for shade, on the ground that it has the property of attracting to itself such moisture as may be in the atmosphere, thus bestowing freshness and luxuriance upon the coffee-plant which it covers. There can be no doubt, however, that the banana is selected as a shade-tree chiefly because it bears valuable fruit, which, on the Mexican or the Interoceanic railways, readily realizes from $1 to $1.25 per arroba (25 pounds). Besides the banana, the orange, the lime-tree, aguacate, walnut, mamey-tree, castor-oil plant, the fig, and the rubber-tree, as well as a host of others, are found in the State of Vera Cruz as shade for the coffee-tree. All the trees specifically mentioned yield more or less valuable fruit, and they are thus desirable on their own account, apart from their shading services."

In the valley of the Coatzacoalcas river, the proper northern part of the isthmus of Tehuantepec, coffee-growing is no new experiment, having been carried on since the time of the French colonists settling there in 1829-32, and even at present there exist remains of some of these old plantations in the towns of Jaltipan, Soconusco (Santa Ana), Acayucan, Hidalgotitlan, and many places on the banks of the Coatzacoalcos and Uspanapa rivers; but invariably they all are shaded, and of the new plantations, many bearing and shaded by rubber-trees, exactly as good results are given in yield of coffee as when shaded by jonote, coscalite, cocuite, and other shade-trees. In this district the good result is proved by actual experience and existing examples;—it is no theory waiting for development. In a plantation thus formed with rubber shade, when the conditions will allow, the cost of production of coffee is not increased, as Señor Romero states, for the rubber forms a greater producing factor than the coffee itself, and the same extension of ground planted in coffee with and without rubber shade-trees, will give more than a double revenue in the former case; or, the capitalized value of the plantation in former case is more than double what it is in the latter, with hardly an imperceptible difference in cost of forming plantations.

It is not on account of an excessive heat on the isthmus, that the shading of coffee is necessary. From the pass of Chivela in the Sierra Madre to the gulf coast the extreme temperature is between 99° and 57° F. In a letter on this subject from Coatzacoalcos, dated August 17, 1880, Mr. Martin Van Brocklin, late chief engineer of the Metropolitan Elevated Railroad Company of New York, and at the time chief engineer of the Tehuantepec railroad, says: "The thermometer hanging in my office has not been above 85° F. since July 10, when it reached 88°, nor has it been much more than 10° below these figures," and this was during a portion of the hottest season of the year, and Coatzacoalcos is the hottest portion of the northern division of the isthmus.

The shading of coffee is necessary on account of the continued dry southern winds, prevailing during March and April, which, in addition to the sun's rays, will completely bake the ground and exhaust the moisture, and small plants, if not protected, succumb to the combined influence of these elements. The isthmus, on account of the great depression of the Sierra Madre,—only some 900 feet at this point, but rising very abruptly on both sides,—feels the effect of the south winds as no other part of Mexico on the Atlantic slope. Through the effect of the same topographical conditions, by causing a continuous circulation of air currents from ocean to ocean, there is given to this region a cooler and more salubrious climate than is encountered in any other part of Mexico or Central America, included within the tropics at the same altitude.

Rubber should be planted from the seed, which falls in April and May, or from young plants from a nursery, at the beginning of the rainy season, in order to be well rooted to resist the effects of the dry season. At the time of planting the prevailing rains are generally severe showers of short duration, with afterwards an almost instantaneous hot sun. Hence, if the young plants are not protected by some light shade, a considerable proportion of the rubber-plants is sure to be scalded. It is true that the rubber afterwards thickens in the trunk quicker in the open, but the coffee must have shade in the dry season, and unless rubber be planted three years before, some other shade is necessary, and low trees like bananas, planted properly, retard the growth of rubber very little.

Jaltipan, Vera Cruz, Mexico, October 30, 1893.

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ANOTHER RESPONSE TO SENOR ROMERO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I notice with surprise the criticisms of Señor Romero, in relation to F. O. Harriman's experience in coffee and rubber cultivation on the isthmus of Tehuantepec as detailed in his article

in your edition of August 15. My brother has had an almost continuous experience in the locality mentioned for over ten years past, and has given the subject an exhaustive study, in connection with the opportunities afforded him through the pursuits of his profession as civil engineer engaged in locating and building the railroad across the isthmus.

That the lands and climate of this locality are unusually well suited to the cultivation of coffee, a number of plantations in the neighborhood, such as Pena Blanca, Villa Alta, and the Boca de Chuniagoa, can testify.

These plantations yield per tree enormously more than those of Cordova and the coffee-producing districts of Oaxaca. On account of the great fertility of the soil the trees open out so much that they have to be planted three and four yards apart, else in four years they would completely interlace. The trees commence to bear in three years after first setting out, and when in full bearing, in five years, will yield large amounts. At the Pena Blanca plantation the average crop is 3½ pounds per tree; it is of a very superior quality, with a little less caricolilla than Cordova or Oaxaca perhaps, but the yield per tree is very much greater than in those districts where only from ½ to 1½ pounds per tree is obtained, and naturally it will be a great deal more advantageous to cultivate plantations in this district.

I fail to grasp the pertinence of Senor Romero's suggestion that "the fact that coffee trees cannot grow in this locality without shade, shows it is not the proper zone for coffee growing." This fact is no more conclusive than the fact that a few years ago, when the railroad construction company sent 3000 wheelbarrows to this locality, the native Indians employed there would not use them until they had taken out the wheel and placed a man at each end of the barrow, is conclusive that nineteenth-century ideas are not applicable to labor in this district.

The simple fact that it has been the custom until recently to cultivate coffee only at a higher elevation above the sea-level than this valley, seems to me to offer no valid reason for not accepting the much greater yield of the product attained from richness of soil, etc., here with *shade*, especially when the product of the shade trees, in seven years from planting, yields a larger profit than the coffee-trees even, and divides the expense of maintenance.

For commercial purposes, it *will* do "to change the conditions of nature," as illustrated by the reclaiming of large tracts of the "great American desert," by artificial irrigation, and the deepening of the outlets of numerous rivers by jetties recently constructed. I see no reason for declining to adopt modern ideas for the cultivation of coffee and rubber in conjunction when the outlook is so promising. J. P. HARRIMAN.

Woonsocket, R. I., November 9, 1893.

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OTHER EXPERIMENTS IN MEXICO.

THE Kansas City (Mo.) *Times* reports that several citizens have become very much interested of late in the growing of coffee, cocoa, and India-rubber in Mexico. Some have fine plantations already under way, while many others have contracted for planting. The profits to be derived are believed to be very large, and it is the opinion of W. G. Melville, a Kansas City man who has been interested in Mexican plantations for several years, that "it will be only a matter of one or two years before the greater part of the tropical lands in Mexico will be in the hands of the large English and American companies who are buying for speculation, the land at a low estimate being worth twenty to thirty times the present price of from $3 to $5 per acre." Colonel E. H. Raymour is another Kansas City man who has a plantation in Mexico, besides having contracted to clear and plant some 1200 acres for other Kansas City parties. Roland Hughes, J. W. Coburn, Z. F. Cryder, F. C. Megley, George McFadden, Louis Kunz, and others are mentioned as having plantations of 500 acres each which are easily worth five times what the parties invested a year ago.

Another Kansas City paper mentions Mr. Melville as connected with the Mexican Land Improvement Co., who own 30,000 acres of land on the isthmus of Tehuantepec, in the State of Vera Cruz. No intimation is given of the extent to which India-rubber has been included in these plantations.

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A BELIEVER IN RUBBER-TREE CULTURE.

IN the issue of this journal for May 15, 1893, mention was made of the experiment of a Boston man, Mr. H. C. Emery, who has been for a number of years a large importer of mahogany from Colombia, in planting rubber-trees on land owned by him in that country. In a letter to the editor, Mr. Emery writes:

"I take great pleasure in telling you that I have 125,000 healthy plants in my plantation. From reports that I have had from my manager in South America, I learn that the yearling plants are as large as a man's arm and a little taller than a man. Of course, as I have informed you before, this is an experiment in every sense of the word; still I intend to go on planting until I have half a million trees. While I would not advise any one to go into this business, I personally have great faith in it."

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MANUFACTURERS AND RUBBER-PLANTING.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I am endeavoring to interest capital with me in the planting of a tract of land in Mexico in India-rubber and coffee. Can you tell me of any rubber-manufacturers or others in this country who have shown any interest in this subject? It seems to me that the rubber-men are not alive to the importance of providing for the future supply of rubber in face of the fact that their present source of supply is bound to be gradually wiped out, and that the rubber-tree is so easily propagated and so hardy.

J. D. K.

[WE have not heard of any rubber-manufacturer in the United States or elsewhere who is sufficiently interested in the future of the supply of India-rubber to lead him to invest any money in the cultivation of plantations for the preservation of existing forests. Our manufacturers seem content so long as they are able to buy rubber in the markets of the world on as favorable terms as their competitors in other countries. Undoubtedly several years must elapse before returns could be expected from any sort of investment in rubber-cultivation, and our rubber-men, not unnaturally perhaps, prefer to invest their money where prompter returns can be hoped for. There is no reason to suppose that a genuine rubber famine will be experienced in the life-time of any rubber-manufacturer now in the business. Manufacturers seem perfectly willing, therefore, to leave to their successors in the next generation the business of meeting whatever demand for crude rubber may then exist. Nevertheless, THE INDIA-RUBBER WORLD is of the opinion that good returns await the judicious investment of capital in both rubber-planting and the intelligent care of existing rubber forests in certain quarters. As the result of efforts in this direction it would seem probable not only that rubber may be produced more cheaply than at present, but that it may be brought to our markets in better condition than that in which it now comes from most sources of supply. It should be understood in every case, however, that prompt returns on investments are not possible, and that considerable preliminary study of the field selected is essential to success.—THE EDITOR.]

RUBBER TIRES FOR CARRIAGE WHEELS.

THE head of the firm of Brewster & Co., the carriage-manufacturers, who supply the New York city demand for rubber-tired carriages, recently talked to an INDIA RUBBER WORLD man on the progress and prospects of rubber tires in this new field. Eight years ago Brewster & Co. introduced the rubber tire, and the demand has gradually increased, being at present fairly large. No change whatever has, however, been made by the company in the system in the eight years that have elapsed. The patent is an English one, and those who use it in this country pay royalties.

"To what kind of carriages have rubber tires been applied?" Mr. Brewster was asked.

"The rubber-tire is a luxury pure and simple," was the answer. "We use it only for the heavy, closed, and most expensive carriages There is no object in using them on open carriages, as they drive well anyway. Then again it would be impracticable to have rubber-tires on any other than city carriages, not on account of the roads, however, but because in the country it would be difficult to keep the carriages in good shape and order. In the nature of things the rubber is liable to break, and in the country there is no possibility of repairing the damage."

"Do you anticipate any extension of the use of the rubber tire to other than city carriages of the kind described?"

"I really do not. The rubber tire is meant for pleasure. It makes driving easier and more comfortable, and lessens the noise greatly; but there are no other advantages connected with it. It would be ridiculous to use it on trucks, for example, or any other vehicle not constructed to subserve the pleasure of ladies and gentlemen. Those who can afford to purchase a fifteen-hundred dollar carriage will gladly pay one hundred more for the superior advantages of the rubber tire. In fact, I know of no way in which they could spend a hundred dollars more wisely. The difference is sure to be highly appreciated. But of course, when one purchases a five hundred dollar carriage, he could not be expected to pay an additional hundred for the luxury of the rubber-tire."

"Do you use pneumatic tires?"

"No; we do not. We are inclined to regard the use of pneumatic tires as impracticable, at least for the present. It would involve too much trouble, as the liability to puncturing is too great, and no man wants to be constantly bothered about repairs. Nor is it comfortable to be exposed to the risk of such accidents as the cutting of the tires. For similar reasons electric lights have been found impracticable on carriages. Possibility is one thing, easy practicability quite another thing. No improvement is real unless there is reasonable insurance against trouble and accidents."

"It is claimed that the application of pneumatic tires to four-wheeled vehicles is not successful because the tires on the forward wheels are liable constantly to cutting when turning, and because traction is lost also through the hind wheels not running in straight lines with the fore when turning or moving from one side of the road to the other, such variations from a direct line being almost continuous on the ordinary road. It is also urged that the vehicle equipped with pneumatic tires is unsightly when compared with the graceful lines of the modern vehicle. What is your opinion of these objections, Mr. Brewster?"

"I understand that only a few sets have been put on, so that a definite opinion with regard to the success of the pneumatic tire would be premature. The pneumatic tire on carriages is in the experimental stage as yet. But the objection that the pneumatic tire carriage is unsightly seems to be valid."

"Are rubber tires used by European carriage-manufacturers?"

"Yes, and they can be made cheaper there on account of the wages of labor being so much lower than here. But the work is not as good as that of our labor."

* * *

THE same subjects as covered by the above interview were discussed with an officer of the New York Belting and Packing Co. The chief reason for the slow introduction of the rubber tire in the carriage industry is, in the opinion of the company, to be found in the inferiority of the pavements in American cities. Our cobble-stone paving is a serious obstacle to the use of rubber tires. It is true that the rubber-tire is a luxury, but its benefits are so great and easily appreciated that, given better pavements, the rubber tire would speedily become a favorite, and all pleasure carriages, heavy as well as light, cabs, hansoms, and buggies, would have them. It is a fact that in England and France thousands of carriages and cabs are rubber-tired, and the reason is that they have asphalt pavements there which reduce the danger of cutting to a minimum. When this danger is eliminated, no further drawback remains, as the mere wear and tear of the rubber is a trifling matter. When we get better pavements, we shall have as many rubber tired carriages as England or France, where the number of such carriages is large and increasing rapidly. It is hardly to be expected that trucks and other purely business vehicles will ever use rubber tires; such an application would be without utility. It is also apparent that there is no object in using rubber tires in the country, for country roads require no devices to diminish noise. But so far as cities are concerned, it is unquestionably true that we need nothing but good pavements to create a large demand for rubber tired vehicles.

As for the pneumatic tire, the New York Belting and Packing Co. are experimenting with it on a small scale, with results of a distinctly encouraging and gratifying character. The pneumatic tire has certain decided advantages over the ordinary rubber tire. It is not afraid of cutting; against this danger it is protected by its yielding quality. But the liability to puncturing is a very grave difficulty, in the overcoming of which consists

the problem upon which all interested in the success of pneumatic tires are engaged. It is not to be denied that there is a serious difficulty here, but recent experiments go far to show that eventually the problem will be solved and the pneumatic tire crowned with success. The tendency of all recent improvements is toward mechanical fastening, which shall make it possible to repair a punctured tire in a few minutes and without much trouble. Though it may appear strange at first sight, it is nevertheless easily shown that the heavier and larger the vehicle, the smaller the risk of puncturing the pneumatic tire. The hind wheel of a forty-pound bicycle receives more pressure than one of the wheels of a 200-pound vehicle; and the risk of puncturing is in inverse ratio to the diameter of the tire. The Belting and Packing company firmly believe that before long the pneumatic tire will supersede the solid rubber tire on carriage wheels; but at present the work is yet largely experimental. Experiments are expensive, and therefore they are confined to the lighter vehicles. The moment the pneumatic tire proves a success on such vehicles, its adaptability to heavier vehicles will be established without further evidence. The results of the experiments so far made justify the hope and belief that the pneumatic tire has a great future in the carriage industry, using the word carriage in a sense which excludes nothing but trucks and similar vehicles.

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THE seventeenth annnal show of the Stanley Cycle Club was opened in London on November 17. In addition to the usual extensive variety of bicycles and bicycle-tires, there are other features in the shape of rubber tires which have attracted much attention. The North British Rubber Co. exhibit a brougham with pneumatic tires, and the Preston Davies Tire and Valve Co. a dog-cart similarly equipped. "The future use of air-tires in vehicles is an assured fact," writes the London correspondent of *The Wheel*, "and the moment a thoroughly satisfactory air-tire possessing qualities suitable to bear the wear and traffic is placed upon the market, then will be a vast and increasing demand."

RUBBER SHOES IN ONE NEW YORK SCHOOL.

IF any one should take the trouble to make the rounds of the public schools of the city on a rainy day or snowy day he would find a large number of children with wet feet. This condition, due for the most part to the negligence of parents, undoubtedly helps to swell the sick list, and often the death rate, from croup, diphtheria, pneumonia, and the rest.

At Eighty-fifth street and First avenue is a grammar school having a registry of 846 girls, the Principal of which is Miss Julia Richman. This principal exerts herself in the most praiseworthy way to correct, in her jurisdiction, the evil mentioned. Asked recently what system she used to prevent wet feet, and how she managed when she encountered them, Miss Richman replied:

"I can hardly say I have any system for getting my girls to wear overshoes in wet weather. I simply insist upon it.

"The general plan I adopt is this: Early in the fall upon a very wet morning I inquire in every class as to how many girls have come out without overshoes. The number is usually large, discouragingly large, as indicating serious lack of supervision on the part of mothers. I catechize each individual delinquent, and the customary replies are: 'I forgot them,' 'mine are too small,' 'my shoes are too thick,' 'I haven't any.' Then follows a general talk on the physical evil resultant upon dampness absorbed through the feet, and in language not classic I pile on the agony. I tell of the need for growing girls to take every precautionary measure in this direction and give illustrations of the result of inadvertence so far as I can in a general talk.

"I blame the mothers for their carelessness, and then exonerate the mothers and blame big girls for not taking these little cares off the down sweeping assertions: 'if your father can't spare the money for rubbers and a new hat, wear your old hat, but get the rubbers.' I make them see that the thick shoes are no protection unless they are taken off immediately upon coming indoors, as the dampness in the leather will penetrate. The girls pleading 'I haven't any,' I interview in private and unless their parents are very poor, I insist that they must get them. I never had a parent resist. The very poor I supply by begging partially-worn rubbers from my friends. Giving new ones encourages pauperism.

"By the next wet day all my girls own rubbers, and then either I or the teachers inquire every following wet day as to how many girls forgot. Such as have I send home to dry their feet, put on rubbers, and return to school, marking them absent for the time lost. This makes them careful and we rarely have a girl forget. In such weather as this, sunshine above but water beneath, I occasionally ask the assembled school. 'Who came without rubbers to-day?' and then emphasize the importance of wearing them daily until the snow is all gone from the walks. That is the whole process—close attention at the beginning of the seasons and a little vigilance later."

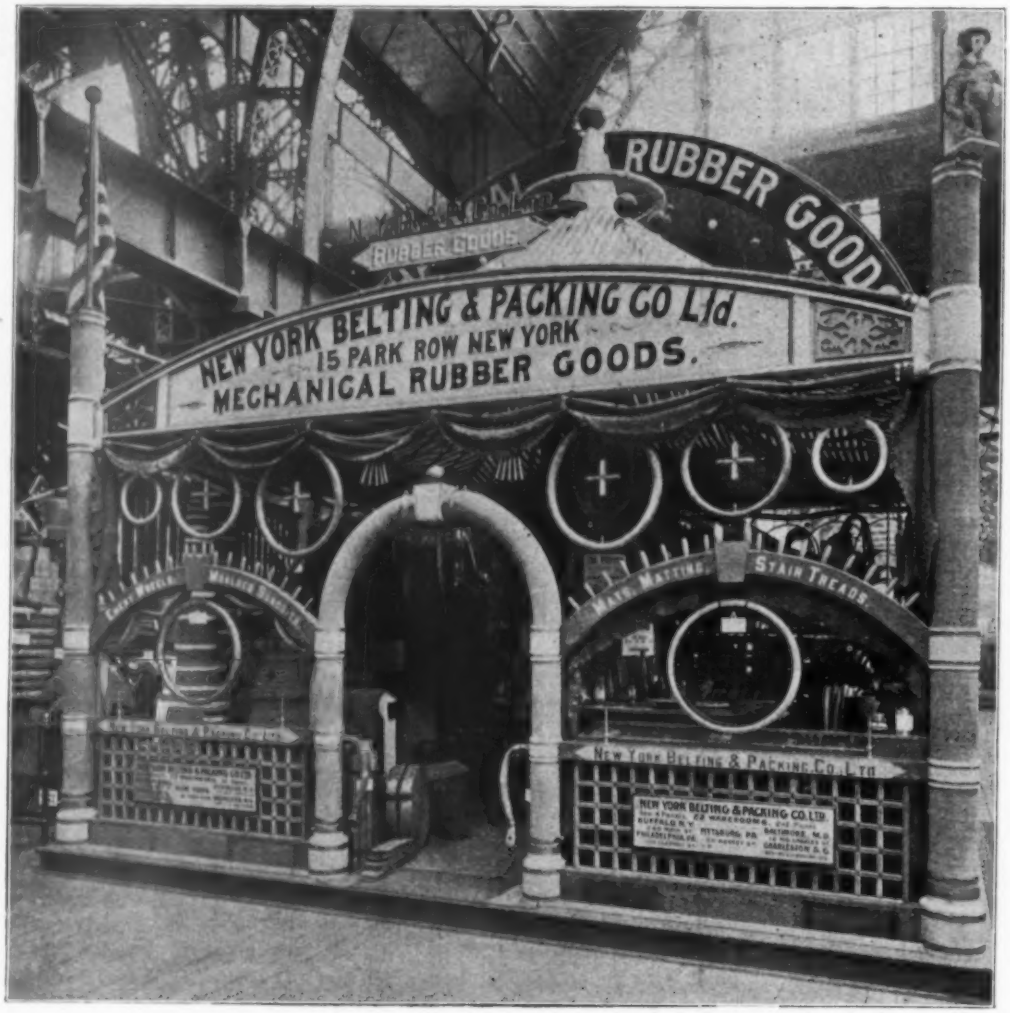
Miss Richman's intelligent and humane action deserves mention and imitation. Health could certainly be preserved, probably lives saved, if others heads of schools pursued the same careful and conscientious course.—*New York Times.*

IT appears that the rubber window-cleaner is a patented article, and in the control of one company. They are made of hard wood, oil-finished, with a sheet steel socket handle, and have a drip-catcher. They are made eight inches, ten inches, and in that progression up to eighteen inches long, the latter costing $9 per dozen. Dealers sell a great many of these articles, first hands looking with suspicion upon an order of less than a gross for a single size.

SOME dealers are selling a cheap floor-scrubber of a block of gum wood $\frac{7}{8}$ inch thick and rubber $\frac{3}{16}$ inch thick. This sells for $3.50 per dozen, while its big brother brings $8.

THE NEW YORK BELTING AND PACKING CO., LIMITED, AT THE WORLD'S FAIR.

ONE of the most novel exhibits seen at the World's Fair was that shown by the New York Belting and Packing Co., Limited (No. 15 Park row, New York). Their display, including the booth, was composed entirely of India-rubber. The effect produced was artistic in the extreme and claimed the attention of visitors at once. The railings were made of rubber, the entrances and gates constructed of suction- and air-brake-hose, and the lower part of the railings latticed with bicycle-pedals. The uprights noticed in engraving, one at either end of booth, were built up of suction-hose, coupled together and crowned by the Stars and Stripes, supported by rubber poles, each surmounted by a rubber ball. The display of curios within the rubber structure was extensive and instructive.


RUBBER GOODS
NEW YORK BELTING & PACKING CO Ltd.
15 PARK ROW NEW YORK
MECHANICAL RUBBER GOODS.
MATS. MATTING.
STAIR TREADS.
NEW YORK BELTING & PACKING CO. LTD.

Among them were rubber shoes made by the natives of Brazil, from which country the company gets its supply of rubber; photographs showing the natives at work gathering and curing rubber, and rubber playthings fashioned by them for their children. An immense Pará rubber bottle weighing 600 pounds stood in the center of the booth and attracted considerable interest. There was also a section of an immense rubber belt (this concern has been noted for its large rubber belts), pneumatic sulky- and bicycle-tires of improved manufacture, among which the famous "Burris-Michelin" and "Whippet" tires were prominently displayed. Footballs, rubber bottles, vulcanite emery-wheels, many samples of steam-, fire-, and air-brake-hose, and other rubber articles made for mechanical and household purposes were also displayed. One stepped upon one of the company's celebrated perforated rubber mats if one entered the booth to inspect these many interesting exhibits, passing beneath an arched entrance ingeniously constructed of several sections of suction-hose coupled together, from the rubber keystone of which the visitor received a true American invitation in the terse inscription, "Walk In." Notwithstanding the liberal extent of the booth, one wonders how the company managed to show off so many goods to such excellent advantage. The exhibit was one of the most striking in Machinery Hall and showed the expenditure of considerable time and attention and no inconsiderable display of ingenuity in its design and construction. The engraving gives a very truthful reproduction of its appearance.

THE Boston Belting Co. in the past made a superior article of electric tape, but owing to the capacity of their factories being absorbed in other branches, they abandoned its manufacture. Owing to the amount of inferior goods offered to the trade, the pressure for them to resume in this line has been of such a character as to induce them to again resume the manufacture of this article, and they are now placing upon the market tape equal in all respects to that once made by them. Electric tape in its inferior shape lacks with age adhesive qualities.

THE chatter of a bicycle crank is the worst kind of a pneumatic tire.—*Exchange.*

A RECLAIMED-RUBBER INJUNCTION SUIT.

LAWYER JOSEPH H. CHOATE applied to Judge Beach in the New York supreme court, chambers, on November 24, for an injunction to restrain Rudolph A. Loewenthal from dealing in rubber waste pending the trial of a suit brought by the Rubber Reclaiming Co. for a permanent injunction and to recover $75,000 damages from him.

Mr. Choate claimed that at the time of the amalgamation of four concerns into the present Rubber Reclaiming Co. Mr. Loewenthal entered into an agreement not to deal individually in rubber waste for a period of ten years. He was practically in charge of the consolidated business, in which he owns 412 out of 1100 shares of stock, until January 1, 1893, when the other interests combined against him. He then surrendered his office, though he retained his interest in the company, and went into business on his own account. Mr. Choate said he had cornered the market and forced up the price of rubber waste nearly 25 per cent.

Lawyer William H. Blain, in opposition to the motion, said the increase in price of the raw material had been due to natural causes, decreased supply and increased demand, and not to any corner in the market. He denied that Mr. Loewenthal had agreed to remain out of business. Decision was reserved.

NOT A SPECULATIVE COMPANY.

THE United States Rubber Co., says the Boston *Commercial Bulletin*, is fortunate not only in having several millionaires upon the board of directors, but also in that none of them are speculators. This board thus contrasts favorably with those of the sugar, cordage, whiskey and other "trusts" whose managements are more or less distinguished for speculative tendencies. The rubber people, the *Bulletin* says, have no interest in common with the stock trading in Wall street, but are endeavoring to develop to the utmost the business and earnings of their company upon legitimate lines. In considering the affairs of the United States Rubber Co., the Boston paper continues, particularly in comparing it with other "industrials," one very important factor should not be overlooked, namely, the radical difference in the nature of its products compared to the others. For example, there is always a market for good sugar, rope, or spirits, and for this reason a company with sufficient capital can always start a sugar, cordage, or distilling plant and make it pay. But in the manufacture of rubber boots and shoes, it is an entirely different matter. The trade runs on certain brands and the development of the popularity of these brands is the result of years of patient labor and experience.

SURVEYING IN RUBBER FORESTS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The leading article in your issue of November 15—that by the Baron de Marajó, on "The India-Rubber Outlook in Amazonia"—is excellent. That he should say the rubber juice "congeals," in the smoke, instead of "solidifying," is pardonable in a foreigner, but would be inexcusable in an American writer, although it is a common mistake. Of course congelation can take place only in the presence of cold, so to speak. But the Baron's article is a first-rate one, and gives a clearer account of rubber-gathering than I remember to have seen before.

By the by, why don't they survey in the forests of Brazil over the tops of the trees instead of trying to hew out a sight-line through the terrible undergrowth? A ladder arrangement of some kind, which could be made on the spot, enabling a surveyor to get above the tree-tops, would permit of getting corners by triangulation. With corners and courses defined, it would become a much simpler matter to settle disputes over the ownership of certain trees. O. K. T.

Philadelphia, November 27, 1893.

A CHEMIST ON RUBBER CORKS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Referring to a headline in the last number of your journal, permit me to observe that "they" do not "try rubber corks" because such corks have been tried for years, and found by druggists to be worthless for almost every purpose. One might as well propose that "they" use a corncob wrapped with a wrapper—that good old stopper for a whiskey-bottle that experience has shown to be the next best thing to a cork. The fact of the business is that everything made of India-rubber goes to sticks, even if it isn't used. Chemistry is getting in its work by night and day, right straight along, and the first thing one knows the rubber cork, or other article, has "eaten itself up" and is worthless. A CHEMIST.

Kansas City, Mo., December 2, 1893.

KNOWLEDGE-SEEKERS AT THE FAIR.

THE curiosity of the average citizen regarding rubber footwear is only equaled by his ignorance regarding their product, says the *Boot and Shoe Recorder*. An example of this ignorance its World's Fair correspondent instanced in the case of the lady who came expecting to see sap running from rubber trees. Others have gazed admiringly on the rubber plants and asked how long they had to steep the leaves to get the rubber-juice thick enough to make rubbers! All such queries have been answered pleasantly and with a courteous and kindly regard for the ignorance of the questioners.

An INDIA RUBBER WORLD man, while standing near the Brazilian rubber exhibit, was approached by a lady who asked with great apparent interest, as she laid her hand upon a pile of scraps:

"Is this the way it is?"

And when the answer was made, "It must be, Madam," she walked away as if fully satisfied.

ENGINEERS IN A RUBBER FACTORY.

THE regular monthly meeting of the Boston Society of Civil Engineers on November 15 was followed by a visit to the No. 2 factory of the Boston Rubber Shoe Co. at Edgewood Fells on the invitation of Mr. G. L. Richards, general agent of the company. A private car was provided for the guests, and their host was met at the mill by Superintendent Robinson, who assisted in conducting the engineers through the entire plant, explaining the mysteries of rubber-manufacture at each step from the washing-room to the rooms where the finished goods were being turned out. Many of the gentlemen had never seen rubber shoes made and expressed much delight at their new experience. The immense plant was brilliant under the recently-added system of electric lighting, and the visitors greatly admired the heavy machinery of the grinding- and calendering-room, and the two magnificent engines.

ONE of our contemporaries advises putting a thin strip of rubber between the soles as a substitute for a rubber shoe which, by the way, is often done.

RUBBER-GOODS EXPORTS FROM NEW YORK.

THE figures herewith express the values of rubber goods exports from New York during the four weeks ending November 28, 1893, (covering the period since our last published report) as declared at the Custom-house. It may be mentioned that the exports from New York amount usually to about 53 per cent. of the total exports of rubber goods from the United States; also, that exports by land routes to Canada and Mexico seldom are recorded in government statistics.

To—	Value.	To—	Value.
Africa	$ 265	Hull	$ 55
Antwerp	1,708	Japan	556
Australia	1,179	Liverpool	355
Bolivia	90	London	2,210
Brazil	147	Madrid	181
Bremen	177	Marseilles	817
Breslau	154	Mexico	1,224
Central America	314	Newfoundland	79
Chili	400	New Zealand	4,063
Christiania	9	Nuremberg	8,894
Colombia	372	Peru	12
Copenhagen	818	Porto Rico	35
Cuba	2,793	Rotterdam	2,208
East Indies, Dutch	115	Southampton	275
Ecuador	321	Uruguay	43
Genoa	2,980	Venezuela	579
Glasgow	152	West Indies, British	279
Hamburg	764	West Indies, Danish	22
Havre	1,850	West Indies, French	12
Hayti	424		
Honduras	40	Total	$37,031

The exports of crude India-rubber from New York during the same period amounted in value as follows:

To—	Value.	To—	Value.
Havre	$ 50	Rotterdam	$5,800
Liverpool	6,010		
London	1,397	Total	$13,257

There may be mentioned, also, exports of India-rubber thread to Antwerp ($2317) and to Havre ($1035). India-rubber "scrap" is mentioned—London, $533, and Glasgow, $1066—and India-rubber "waste" to Bremen, $186.

WHERE OUR RUBBER COMES FROM.

THE United States government has published a pamphlet under the title "Principal Exports to the United States Declared at the Several Consulates," the statements covering the calendar year 1892 except in a few cases. Though other government publications show the exports from the several countries to the United States, this is the only one which mentions the consular districts in the several countries wherein the exports have their origin. It is true that in some cases goods are "declared" in districts in which they are not produced (crude rubber in Liverpool, for instance) yet the rule is that goods are declared in the districts of production. The figures relating to India-rubber are now presented herewith, but it is proper to state that the table is not complete for the reason that at a few consulates, where rubber is comparatively an unimportant article of export, the figures for this product are included under the heading "all other articles."

France—Havre	$ 224,000
Germany—Hamburg	518,212
Netherlands—Amsterdam	82,778
Rotterdam	91,467
Portugal—Lisbon	683,957
United Kingdom—Liverpool	1,779,865
Mexico—San Blas	4,362
Tuxpan	9,827
Guatemela—San Jose (6 months)	20,368
Honduras—Ruatan	2,862
Puerto Cortez	4,502
Truxillo	1,823
British Honduras—Belize	9,913
Nicaragua—Managua	26,465
San Juan del Norte (9 months)	87,476
Bluefields (6 months)	71,768
Brazil—Bahia	60,628
Pará (including Manáos)	13,888,057
Ceará	24,490
Colombia—Barranquilla	7,354
Cartagena	66,000
Colon	4,147
Panama	108,687
Ecuador—Guayaquil	129,543
Esmeraldas	43,274
Africa—Madagascar	99,845
Zanzibar	11,349
British Asia—Singapore	35,241
Total	$18,098,066

The Gutta-percha items are: Curaçao, Dutch West Indies, $2685; Trinidad, British West Indies, $8211; and Singapore, British Asia, $49,803. The exports of Balata noted are from Demerara, British Guiana, $1083; Paramaribo, Dutch Guiana, $11,081; and Carupano, Venezuela, $506.

THE TRADE IN CHICLE.

SOME idea of the extent of the trade in Chicle may be gained from a transcript of the manifest of the steamer *Orizaba*, which arrived at New York on November 15. The consignments of Chicle were to the firms named below:

	Bales.
From Vera Cruz—P. Harmony's Nephew & Co	13
From Tuxpan—J. W Wilson & Co	94
Louis Monjo & Co	24
The Seeger & Guernsey Co	32
H. A. Forrest & Co	56
From Tampico—J. W. Wilson & Co	4
From Campeche—G. Amsinck & Co	10
H. Marquardt & Co	136
Total	369

Estimating the bale at 175 pounds for the ports first named, and at 125 for Campeche—these being the usual averages—the receipts by the *Orizaba* aggregated 57,295 pounds.

The *Saratoga* arrived November 22 with:

	Bales.
From Vera Cruz—P. Harmony's Nephew & Co	46
From Tuxpan—J. W. Wilson & Co	46
H. A. Forrest & Co	36
H. Marquardt & Co	40
From Laguna—Seeger & Guernsey Co	59
Total	227

The declared value of Chicle exports from Tuxpan to the United States during 1892, according to the United States consul at that port, was $415,815, and the declared value at Vera Cruz (including the commercial agencies of Coatzacoalcos and Frontera) was $59,850. Chicle is not mentioned in connection with any other ports in the government publication, "Principal Exports to the United States, Declared at the Several Consulates." The total annual average of exports of this gum from all Mexico reached only $160,000 between 1883 and 1887. In 1892 it reached, according to an unofficial authority, $700,000, though it had twice previously gone to a higher figure.

The Seeger & Guernsey Co. advise THE INDIA RUBBER WORLD that the crop in Tuxpan will be short this year, for the reason that the authorities have prohibited the extraction of gum in the canton of Tuxpan. The Chicle now exported from Tuxpan comes from the canton of Papantla, farther inland. The market has been firm. Prices last month were quoted at 24@25 cents per pound by sellers and 23@24 cents by buyers. Higher prices are anticipated in the trade in consequence of the restricted production.

BRIEF ABSTRACTS OF RECENT RUBBER PATENTS.

AMONG recent patents issued by the United States Patent Office, embodying applications of India-rubber or Gutta-percha to a greater or less extent, have been the following. It is not practicable here to do more than to note the use of rubber in each case, with sufficient detail to enable those who are interested to decide whether or not to look into any particular patent more fully:

TIRES.

No. 507,089.—Wheel-Tire. Frederick D. Owen, Washington, D. C.

A tire having inflatable-edge compartments and an inflatable pneumatic filling tube, in combination with a branched supply pipe for filling the compartments and tube simultaneously, the branches of the supply pipe having each a shut-off valve.

No. 507,090.—Tire for Vehicles. Frederick D. Owen, Washington, D. C.

The combination with a wheel rim, of a tire band provided at its edges with inflated tubular pockets, adapted to be seated in said rim, and a retainer arranged within the tire band, consisting of a body or band, having wired edges located adjacent to the edges of the wheel rim, the body of said retainer being interposed between the body of the tire band and its circumferential inflatable pockets.

No. 507,224.—Inflating Device for Pneumatic Tires.

The combination, with an air-pump hose within the end of which the pneumatic tire nipple may be inserted, of means for compressing said hose about said nipple to form an air-tight joint between the tube, said means consisting in a loop, a follower, and a device for forcing in said follower.

No. 606,424.—Tire. Alfred Ducasble, Paris, France.

The combination of a tire, semi-elliptical in cross-section, said tire being thickest at the base where it joins the rim, and gradually decreasing in thickness to the vertex which forms the tread, a wheel rim having projections on each side adapted to embrace the tire on the inner and outer sides of the thickest portion or base thereof, and an open air vent in said rim in communication with the interior of the tire.

No. 506,550.—Pneumatic Tire. Albert J. Rosentreter, Rochester, N. Y., assignee of one-half to Edward Schirck, same place.

The combination with the rim and inflatable sections of an air tube located inside the rim, a seat provided with a nozzle, and a stiffener attached to the sections, and forming a direct connection with the tube.

No. 506,594.—Pneumatic Tire. William C. Kehler, Flowerfield, and Frederick A. Wegner, Three Rivers, Mich.

The combination with a pneumatic tire having an air tube within a casing, of a pocket or case inserted between the air tube and the casing and composed of two layers of rubber or other material between which is interposed and confined an unwoven body of raw cotton.

No. 507,325.—Pneumatic Tire. Alexander P. Morrow, New Brighton, assignor of one-half to Harmon H. Fulton, Beaver Falls, Pa.

The combination in a wheel tire of the rim, having inwardly curved edges; the flexible casing, having the shoulders formed along the two side edges thereof and further provided with the wedge shaped key formed integrally with said casing, and the air tight flexible tube lining said casing.

No. 508,306.—Wheel-Tire. Richard R. Gubbins, Belvedere, England.

The combination in a wheel of the character described, of the concave convex rim, the spokes, the annular rings seated in said rim, the clips connected with the ends of the spokes and having their ends bent around said rings, the air tube, the cover extending partly around said tube, and provided with hooks which engage with said rings, and the chafing strip interposed between said rim and air tube.

RUBBER CLOTHING.

No. 507,466.—Waterproof Suit. Otte Van Ostrum, Portland, Ore.

In a water-proof garment, the trousers, the jacket joined to the trousers, and both open in front, the folding and laterally-extensible lining within and the removable disk in an aperture formed in an elastic diaphragm upon the lower portion of the lining.

BOOTS AND SHOES.

No. 508,034.—Pneumatic Sole. Fillmore Morse, Farmington, Conn.

A shoe having an elastic air-tight bag, between the insole and the outsole, a stem on the bag, an inflating tube and valve accessible for the purpose of inflation, the inflating valve and stem being located in a channel made in the upper side of the outsole at or near the instep of the shoe.

INSULATED WIRE.

No. 506,830.—Insulated Electric Conductor. Leonard F. Requa, New York.

An insulated conductor or group of conductors inclosed in a sheath or tube of soft rubber held out of contact therewith by a fibrous insulating material, and surrounded by a metallic protective armor.

No. 507,257.—Insulated Wire. Herman H. Brown, Montreal, Canada.

In the insulation of wire for electrical purposes the combination of an inner water proofing coat of plastic substance; two superimposed braid coverings, the innermost one of which is saturated when in place with a solution of silicate of soda, and an outer coating of size.

SADDLERY GOODS.

No. 500,941.—Hoof-Pad. Frank A. Ryan, Sherman, Texas.

In a foot-pad for protecting an animal's foot, an adjustable rubber pad adapted to be arranged within the shoe of the animal, and provided with metal braces passing through the pad for engagement between the foot and the shoe, in combination with a fastening strap applied to said braces and adapted to pass from the heel end over and around the foot of the animal.

DRUGGISTS' SUNDRIES.

No. 506,882.—Syringe-Coupling. Charles E. Longdon, New Haven, Conn., assignor to the Seamless Rubber Co., same place.

An elastic-bulb syringe-coupling made of hard rubber and having a retaining-bar formed integral with it, and a valve located within the coupling and retained in place by the said bar, and introduced into the coupling by temporarily stretching the same and displacing the bar while the coupling is soft and before the rubber has been completed.

STATIONER'S SUNDRIES.

No. 506,539.—Mucilage-Holder. William H. Palmer and Walter W. Davis, Warren, Pa.

The combination with the compressible bulb, of the nozzle pipe having its outer end interiorly threaded, and the felt held in place by engagement with said threads, the said felt having a metallic tube within the portion engaging said threads.

MISCELLANEOUS.

No. 501,167.—Elastic-Tread Horseshoe. George W. Savage, Norwalk, Ohio.

A horseshoe, consisting of the metal shoe proper provided with lugs on the opposite edges thereof that are arranged in parallel pairs and having fastening openings between the said lugs, and a cushion of yielding material bearing against the said shoe proper and located between the said lugs, the said cushion having transverse recesses at intervals therein into which the said lugs are bent inwardly toward each other, and also pro-

vided with vertical recesses on the outer side of the same to permit access to the fastening openings in the shoe proper.

No. 499,778.—Car-Wheel. Henry E. Butts, Detroit, Mich., assignor of one-half to William H. Mercer, same place.

In a car-wheel, the combination of the hollow web, the hub, the tread, the hollow flexible cushion, interposed between said tread and hub, and bearing against the former, the duct passing through the web and communicating with the space in said cushion.

No. 499,911.—Type-Wheel. Thomas T. Eckert, New York city, and George B. Scott, Lakewood, N. J., assignors to the Western Union Telegraph Co.

A type-wheel consisting of a seamless soft rubber ring or annulus upon the periphery of which typographical characters are cast, said ring and characters being vulcanized together to form an integral homogeneous mass.

No. 502,802.—Mud-Guard for Velocipedes. Richard M. Woodhead, Nottingham, England.

A mud-guard for a velocipede wheel, consisting of folding supports pivoted to the frame near the axle of the wheel and adapted to be turned back against the frame when not in use, a curved skeleton frame carried by the said supports, and a flexible cover attached to the said frame.

No. 502,939.—Car-Fender. Millard F. Field, Taunton, Mass.

In combination with a car, a pivotal fender having its point of support above its projecting end, when the latter rests upon the track, and composed of parallel spring rods adapted to be swung up against the dash-board, a yielding connection which unites the extremities of the several rods, elastic rollers interposed between said fingers and mounted on said yielding connection, together with means for adjusting the fender in the several positions.

No. 503,841.—Garment-Protector. Edward E. Titler, Philadelphia, Pa.

A garment-protector comprising an overlapping encircling band of inherently elastic material, presenting a smooth flat interior and exterior face, and flattened lips.

No. 503,869.—Horseshoe and Quarter-Boot. John D. Munsey, Diana, Ill.

In a device of the class described, the combination of a bottom having a rim rising above the same, and a rear guard with extensions, all of integral formation and constructed of rubber, fastening straps in connection with the said extensions, depending straps secured to said fastening straps and having buckles thereon, and connecting straps attached to the opposite sides of the said bottom and arranged to engage the buckles on the said depending straps.

No. 503,977.—Policeman's Club. Abiel W. Nelson, New London, Conn.

A policeman's club, composed of a central core piece and an elastic envelope, constructed in an integral piece, and wholly enclosing said core.

No. 504,612.—Hollow Rubber Article. Edward L. Perry, Paterson, N. J.

An oil-can or other hollow rubber article having a body of hard rubber or vulcanite, and a detachable bottom of soft rubber having a flange or rim and a screw flange, both of hard rubber or vulcanite, said screw flange engaging with screw threads upon the interior of the body.

No. 506,286.—Roll for India-Rubber Mixing and Calendering Machines. Robert Cowen and Edward F. Bragg, Cambridge, Mass., assignors, by direct and mesne assignment, to the Automatic Rubber Mixer Co., Kennebunk, Me.

A imperforate metal roll having a central passage, a series of longitudinal parts close to its imperforate periphery, and intermediate lateral parts between said central passage and said peripheral parts, and a dam in the said central passage whereby water introduced through the central passage at one end of the roll is caused to travel through the lateral parts and the peripheral parts and leake through the said central passage at the opposite end of the roll, to thereby cool the metal of the roll not only at its center but also near its periphery.

No. 506,745.—Adhesive Composition. William L. Stanley and Thomas C. Stanley, Cambridge, Ohio.

The herein described adhesive composition for metallic coverings and the like, consisting of coal tar, pitch, gum asphaltum and crude rubber, with alum and whiting.

No. 503,843.—Elastic Horse-Shoe. Michael Hallanan, New York city.

The herein described foot-covering for horses, the same comprising a facing of rubber, an intermediate layer of canvas cemented to the rubber, and a backing of leather, the whole being secured together, and the rubber facing having an integral frog, and a bead or rib in the form of a horseshoe extending from the frog around the sides and front of the shoe in unbroken continuity.

No. 508,272.—Roll for India-Rubber Mixing and Calendering Machines. Edward F. Bragg, Cambridge, assignor to the Automatic Rubber Mixer Co., Boston.

A metal roll having axial inlet and outlet passage extending substantially the entire length of the roll, in combination with a series of independent annular passages and radial passages connecting opposite points of each with said inlet and outlet passages respectively, the successive radial passages leading from the inlet passages extending in opposite directions, whereby fluid of the same temperature is introduced into successive annular passages at opposite sides of the roll, whereby a mean temperature is obtained.

TRADE-MARKS.

No. 502,611.—Lawn-Sprinkler. Thomas Scheen, Oakland, Cal.

In a lawn sprinkler, a cylindrical head having a central opening extending axially into it from one end, and the opposite end closed and forming a flat inclined surface, an inclined segmental slot made through the side of the head, essentially parallel with the end thereof and intersecting the central opening in convergent lines which meet said opening in a plane above the axis thereof.

AN ALLEGED NEW PRIZE RUBBER.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The following paragraph has appeared in print in so many channels of late that it may be proper for your journal to give space to it, together with something in the way of explanation or correction:

The judges in the Forestry building at the World's Fair have awarded a medal to Baron de Marajó, ex-governor of Pará and Brazilian commissioner to the World's Fair, on a new variety of crude rubber as a new and useful discovery. This new product is familiarly known as *Thevetia facifolio*, of the *Apocynaceæ* family, and is taken from a tree of Brazil. The rubber as shown is in thin sheets of a nut-brown color, exceedingly elastic, and capable of being easily worked out into a fabric of gauzy thinness. The Baron thinks the new gum will come into general use in all the manufactures in which rubber forms a part. It is somewhat cheaper than the ordinary Pará rubber.

The fact is that an award was made for *all* rubber in the Forestry building. This so called new crude rubber comes from the manisoba (also spelled maniçoba) and mangabeira trees, and its preparation is similar to that of the product of other rubber-trees. This rubber comes from the States of Pernambuco, Maranham, and Ceará. Some of it has gone over to England, but little of it has come to the United States except in mixed lots. There is no reason to believe that it will become an important factor in rubber-manufacturing. Instead of this rubber being new, it is a fact that almost all writers on the sources of rubber speak of various species of *Apocynaceæ* yielding rubber in Africa, India, and South America. A BRAZILIAN.

Chicago, Ill., November 19, 1893.

The Storm Slipper.

Trade Mark—Registered.

MANUFACTURED EXCLUSIVELY BY THE

Boston Rubber Shoe Company.

THE SUCCESS OF THIS SHOE
IS WITHOUT A PARALLEL IN THE
HISTORY OF RUBBER FOOT WEAR.

High in front, reaching almost to the top of the boot, and completely protects it from the dripping dress.

The Words:

Storm Slipper

are Trade Marked,
and can only be used to apply
to goods manufactured
by the
BOSTON RUBBER SHOE CO.

None genuine without this

Trade Mark.

Mention the India Rubber World when you write.

CRAVENETTE VERSUS RUBBER.

By Victor Yarros.

DOES cravenette hold its own as a waterproof garment? This question is of interest to manufacturer, importer, retailer, and consumer alike. When, about two years ago, cravenette was first introduced in this country as a rival of the mackintosh, great claims were made for it and great expectations were raised by the merits which it apparently possessed. In some respects it seemed to have decided advantages over rubber goods. It is well known that some people object to the mackintosh, and would rather dispense with a waterproof garment altogether than wear it. Now cravenette is porous, light, and free from all objections as to odor, perspiration, etc., which the prejudiced still pretend to discover even in the highest grade of rubber waterproof garments. This threatened to make it a formidable rival of the mackintosh. It has seemed desirable, therefore, to inquire into the present status of this new-comer and determine what the results are of two years experience and familiarity with it.

The writer has talked with importers, rubber-manufacturers, and retailers, and has obtained considerable evidence, of which, however, the indirect portion is the more interesting, as will presently appear. Perhaps it is well to begin by quoting from THE INDIA RUBBER WORLD of May 15, 1893, a paragraph as to the kind of thing cravenette is, by way of refreshing the reader's mind. "The Cravenette process for waterproofing goods," it said, "consists in applying to the fabric a solution which destroys the absorbent properties of the fiber and thus makes it shed water. The solution does not fill up the interstices, however, but leaves the goods porous. It is named after its inventor, Craven, and can be applied to worsted, cotton and silk goods. Worsted and cotton goods are not distingulshable after the process from those prior to its application. These goods are made in Bradford, England. They are not really waterproof, they are simply repellant." Regarding the process itself, nothing definite has been learned by the trade in the two years. It is still a secret, although there is a prevailing impression that the fabrics are treated with alum before they are dyed. At all events, there is no doubt that cravenette differs essentially from real waterproof in that it simply repels and sheds water, instead of—as in the mackintosh—really preventing the water from wetting through.

The first question in point of practical interest is, naturally, whether the demand for cravenette is increasing at the expense of the mackintosh. The first man to whom the writer applied for information was a large importer. His answer was that he was importing cravenette but not very much of it. As to "increase" he exclaimed: "Increase! Does the demand for *anything* increase now, pray? Has there been any increase in *any* line of goods since last spring? People are thankful when there is no great decrease in their business. Wait till business improves generally, and then we may be able to decide whether cravenette has gained in popularity."

It is certainly true that in such dull times as these, when few spend money on anything that is not strictly an absolute necessity, no conclusions can be safely drawn with reference to the normal demand for such an article as cravenette. Still, the question was really as to the general drift of things in the trade for the two years past, and the trade cannot be said to have lacked opportunity altogether to form a more or less correct estimate. Other importers who were seen stated that the demand for cravenette was very slowly extending here, and that a little more "pushing" and advertising would strengthen the hold of this article upon public favor. But even in the opinion of importers the mackintosh has little to fear from cravenette. As one of them said, "Cravenette is next to rubber, on the whole, though in some respects it seems to be superior." This amounts to a withdrawal of most of the claims made for cravenette when it was introduced here after its great temporary success in England.

The testimony of retailers is very valuable. The result of considerable inquiry is that the demand of consumers for cravenette has not increased materially. For every hundred mackintoshes only about four or five cravenette garments are sold, according to the most liberal estimate of a retailer who showed himself very friendly to cravenette. Other retailers did not think the percentage of cravenette was as high as that. Many retailers do not handle cravenette at all, and salesmen in several stores stated that there were no calls for it. They would handle it, they said, if their customers wanted it. A few retailers admitted that they had occasional calls for cravenette, but they were afraid to handle it because they had little confidence in it, and could not afford to risk their reputation for reliable and conservative dealing by giving their patrons a thing which might disappoint them and lead to dissatisfaction with the dealers. But a great many retailers in New York city handle it, and they say that cravenette is sold in all large cities. The smaller places it has failed to penetrate, the demand not being large enough to warrant the retailers in the smaller cities to keep it as they do rubber waterproof goods.

In respect to price, there is little difference between cravenette and mackintoshes. The one costs about as much as the other. There are finer grades and cheaper grades of cravenette, the grade depending entirely on the material. The best goods are made of wool and silk. The cheapest grades are hardly imported at all.

There is no difference of opinion in the trade as to the reasons of the failure of cravenette to gain ground or even hold its own in the market. Although cravenette was, and is, advertised as a waterproof article, as a rival and competitor of rubber, experience has abundantly demonstrated that it is only *shower-proof*. In fact, the manufacturers of

cravenette have never made any other claim for it at home, in England, where it has always been known as a "shower-proof" article, it seems. Now the distinction between a waterproof and a shower-proof garment may be inferred from the terms. A waterproof garment will protect against any *kind* and any *amount* of rain; a shower-proof garment, on the other hand, will only do in a light summer shower lasting but a brief time. Cravenette will repel water, provided the attack is neither heavy nor prolonged. It is obvious, therefore, that it does not really compete with the mackintosh and can never replace it or be made to do its work. A mackintosh does the greater part of its service when cravenette is out of the question. As a prominent member of a firm handling both mackintosh and cravenette garments said to the writer:

"Even to the relatively small extent to which cravenette is used here, it does not compete with the mackintosh. Nobody buys it *instead* of a mackintosh, any more than men buy a waterproof hat instead of an umbrella. The man who buys a waterproof hat buys an umbrella, too. The man or woman who buys a cravenette garment generally has a mackintosh also. Cravenette is a luxury, limited in its use, while the rubber waterproof garment is getting to be almost a necessity. The business man or woman, the workingman, the factory girl, all want waterproof garments of some sort, and nothing but rubber will answer their purpose. But the traveler, the rich lady, the fashionable people in short, who can afford to have more than one real and lasting waterproof garment, will unquestionably find in cravenette an attractive thing that will be of use to them at times when a mackintosh would not be quite convenient. A traveler in the summer will take a cravenette garment on account of its being light, porous, neat, and very attractive generally, but he would not take a mackintosh for the same trip. Similarly, a lady who wishes to go out in rainy weather to make purchases and who only has to walk from her own door to the carriage and from the carriage to the store, will find a cravenette garment entirely adequate. These instances illustrate the uses and demand for cravenette."

There is no reason to doubt the entire correctness of this view. It is borne out by all the evidence, direct and indirect, that it was possible to gather in the trade. In England, too, the writer hears, cravenette is becoming more and more an article of luxury for the wealthier classes, and less and less a competitor of the mackintosh. As such an article of luxury, it may continue to be used and even make new friends, for nobody is disposed to detract from its merits as a shower-proof garment in the sense explained above. But there no longer seems to be any reason for regarding it as a rival of rubber garments.

At the same time, it may perhaps be observed that the rubber manufacturers have been accused by retailers of being too confident and slow in inquiring into the merits of new things threatening to displace some of their goods. It is a fact that many rubber-manufacturers have not taken the trouble to investigate the facts relative to cravenette and do not know even to-day what its true relation to rubber is. Of course confidence in one's own goods is necessary, but the far sighted manufacturer never fails to look into things that appear to encroach upon his domain and to make up his mind whether or not they are permanent and likely to give him anxiety in the future. Three months after cravenette was introduced here, the manufacturers of mackintoshes and rubber cloaks ought to have had all the facts in their possession and an impartial opinion about the standing and prospects of the new claimant to public favor.

CURRENT TOPICS IN THE RUBBER TRADE.

DURING the latter part of November rumors were current in this country of the revolt of the State of Pará in the interest of the insurgent Admiral Mello. This was based upon a telegram to the London *Times*, asserting such a revolt to be a fact. Doubt was at once cast upon the story by the Brazilian minister at Washington, Senhor Mendonça, and subsequent news from Brazil confirmed the minister in his opinion. It seems that there was some rioting in Pará about November 28, but that it had no connection whatever with the troubles at Rio. At the same time reports reached the United States that Admiral Mello had left Rio with one of his war-ships, ostensibly to proceed southward, but the suggestion was made at various quarters that he might, after putting to sea, have changed his course with a view to proceeding to Pará and undertaking to blockade the Amazon. None of these rumors, however, disturbed the rubber market. At the New York Commercial Co.'s offices daily cables were being received from Pará, but containing no mention of political troubles at that port. Mr. A. H. Alden, of this company, said on November 30 that while there had been a material advance in the price of rubber within a few weeks, it had been due entirely to commercial reasons. "There is no tendency to speculate," said Mr. Alden, "and the stock of rubber is ample for the present needs of manufacturers,—in fact, slightly larger than it was a year ago."

* * *

PRESIDENT A. SPADONE of the Gutta Percha and Rubber Manufacturing Co., was thus reported in the New York *Evening Sun* of November 29, in connection with the rumor that the State of Pará had seceded from the Brazilian republic:

"The price of Pará rubber is at present 70 cents per pound. This, it is true, is below the average of the minimum prices for the last seventeen years, but the price within a month past has risen 5 cents. One reason for low prices has been the general business depression and lack of demand.

"Stocks here are light, but are heavier abroad, where money can be borrowed at lower rates than here. Lately for some reason, the rubber has not been reaching Pará as

usual. It has been reported that the rivers were low and that the product could not come down. But the disturbed political condition has also, undoubtedly, had its effect in limiting the number of of rubber gathering expeditions.

"The boot and shoe factories are now running full time, though the mechanical people are only doing half time. The former circumstance, due to the approach of winter, is, no doubt, a factor in the recent rise. The present price of Pará rubber I consider a fair price for the product. It is neither too high nor too low.

"That the United States is specially interested in the trade is shown by the fact that, with Canada, we last year consumed 32,000,000 to 33,000,000 pounds of Pará rubber. The world's crop of rubber is but 60,000,000 to 70,000,000 pounds."

* * *

THE Washington (D. C.) *News* of November 28, published a "special" dispatch from New York regarding a "startling rumor," alleged to be current at the time, with reference to a "great poker game between the Pan-American Rubber Trust ring and Admiral Mello," the Brazilian revolutionist leader. The scheme was nothing less than a division of Brazil into two separate governments for trade purposes. "According to well-informed individuals," read the "story," "the ships recently purchased by Charles R. Flint & Co., ostensibly for the Brazilian government, are not going to Rio, but will sail for the Amazon and quietly take possession there, making a deal with Mello if he wins and compromising with President Peixoto by allowing Rio to become the capital of the new imperial Brazil, while a rubber trust republic will be founded around the Amazon country, including the provinces of Pará, Amazonas and Matto Grosso, an area equal to the Mississippi and Ohio valley." The republic was to pay its expenses by levying duties on coffee, hides, etc., while the export duty on rubber of about 20 per cent. was to be abolished and saved to the "rubber trust." Many Brazilians were said to favor the scheme. The "story" wound up as follows: "The report with regard to Peixoto having purchased the ships cannot be true, it is declared, because he has no money wherewithal to pay, and Brazilian credit is not sufficient to equip a navy on notes of hand. Altogether the alleged scheme for a rubber republic, elastic enough to suit the mercantile interests of the 'combine,' with a nice waterproof navy of its own, is arousing considerable interest and exciting much criticism. There appears little doubt now that the vessels purchased by Flint & Co. are to guard the interests of a coming rubber republic."

A representative of THE INDIA RUBBER WORLD called at the office of the New York Commercial Co., and showed the "story" to Mr. A. H. Alden, secretary of the company (Mr. Flint being out). Mr. Alden read the dispatch with curiosity and amusement. "You hardly need to have my assurance," he said, "that the story is made out of whole cloth and is wildly absurd. I have no idea who the author or authors of it might be, and what their object was. No New York paper has seen fit to allude to this fake even, and it deserves no attention. By the way, I see that the report says that rubber costs fifteen cents a pound on the Amazon and sells here for about $1. This would not be bad if it were only true."

* * *

PRESIDENT FRANK C. JONES, of the new Manhattan Rubber Co., has high hopes of the future of the rubber industry. What follows is from the Paterson (N. J.) *Flying Post* of November 9:

"It is only about fifty years old," said he yesterday. "There are men still living who remember when rubber was first utilized for mechanical purposes and yet it is now one of the leading industries of America. It works its way into new channels of art and industry every year, and the field for future progress is still extensive. There is nothing so profitable in the commercial world as new and useful discoveries, and no industry affords such opportunities in this line as rubber. The adaptation of the air brake to railroad cars creates a new demand for hose, as does also the steam heating of cars. The use of rubber tires for bicycles is a comparatively new discovery, and the rubber-tired carriage is now coming into use."

Mr. Jones says that the rubber industry cares not a fig for the tariff and will not be affected by the tariff "tinkers" now at work in Washington. There is a duty of about 30 per cent. on manufactured articles, but it produces absolutely no revenue, for instead of importing, America is a large exporter of manufactured rubber. We make the best goods in the world and sell freely in the English market.

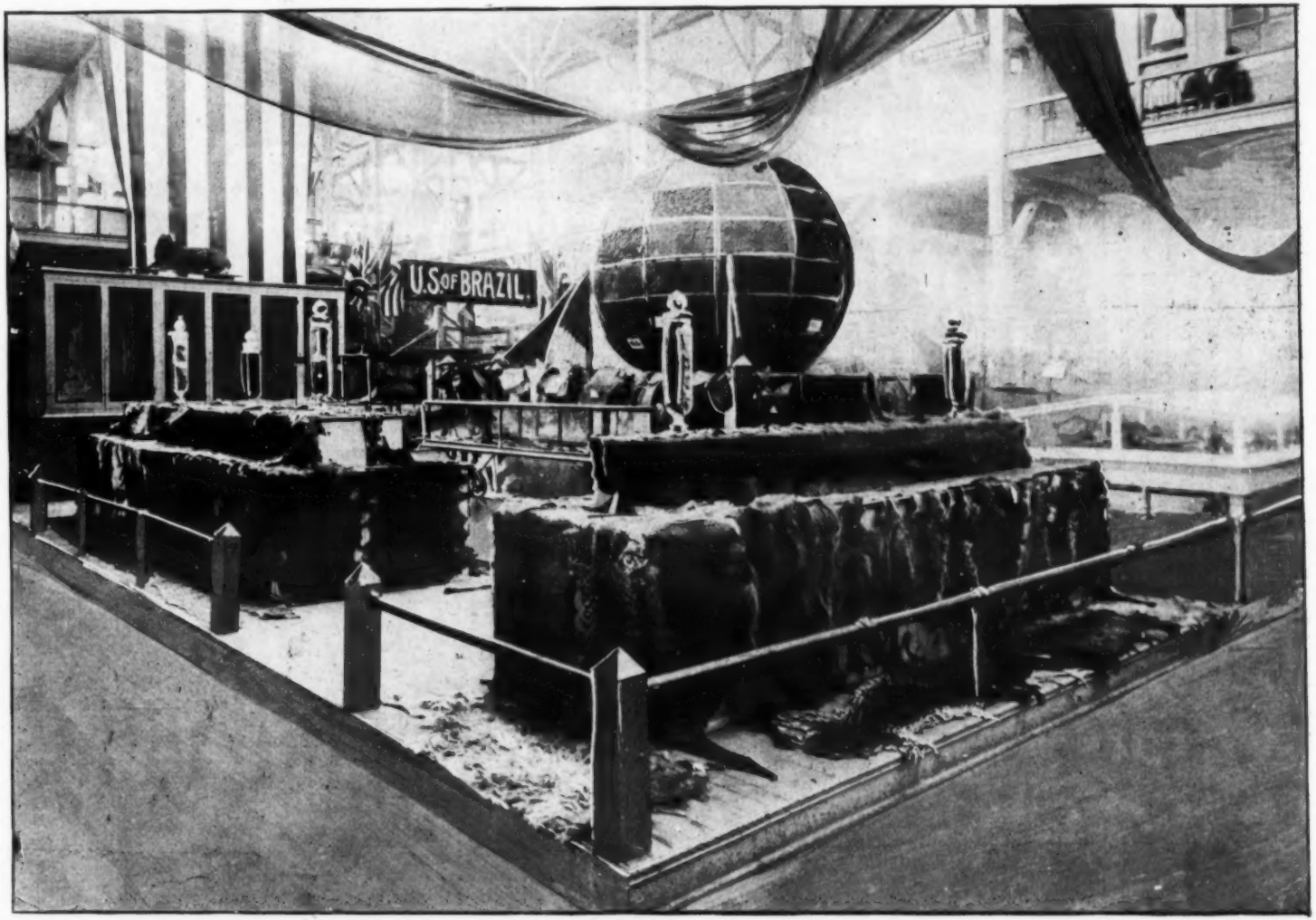
THE RUBBER MOVEMENT AT PARA.

FROM Norton & Co.'s Pará rubber statistics the following table has been compiled, showing the movement (in pounds) at that port for the present year, up to October 31:

MONTHS.	ARRIVALS.	SHIPMENTS.		
		United States.	Europe.	Total.
Stock	1,707,200			
January	3,300,000	2,202,200	1,386,000	3,588,200
February	6,600,000	2,620,200	748,000	3,368,200
March	4,840,000	4,015,000	1,738,000	5,753,000
April	2,365,000	2,413,400	1,504,800	3,918,200
May	1,826,000	1,544,400	1,126,400	2,670,800
June	1,914,000	1,091,200	1,091,200	2,182,400
July	1,980,000	959,200	1,069,200	2,028,400
August	2,640,000	1,062,600	1,216,600	2,279,200
September	2,970,000	1,555,400	1,744,600	3,300,000
October	4,114,000	1,531,200	1,548,800	3,080,000
Totals	34,256,200	18,994,800	13,173,600	32,168,400
Deliveries	32,168,400			
Stock	2,087,800			

From the same source we have the following figures, showing in greater detail the movement for October at Pará:

	Pounds.	Pounds.
Stock on September 30	1,053,800	
Receipts during October	4,114,000	5,167,800
Exports—United States	1,531,200	
Europe	1,548,800	3,080,000
Stock on October 31		2,087,800

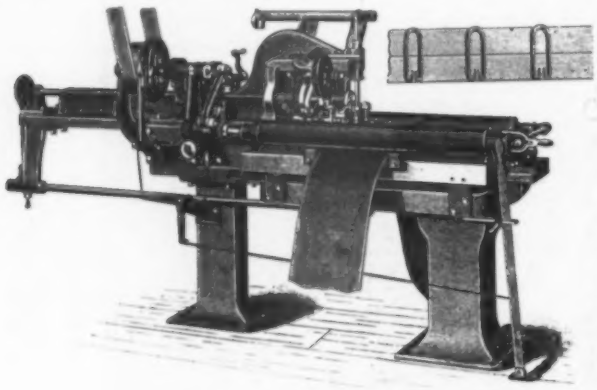


THE BRAZILIAN INDIA-RUBBER EXHIBIT AT THE WORLD'S FAIR.

SHOWN IN THE SHOE AND LEATHER TRADES BUILDING. DESCRIBED IN "THE INDIA RUBBER WORLD" OF NOVEMBER 15. [ENGRAVING FROM THE CHICAGO "GRAPHIC."]

NEW GOODS AND SPECIALTIES.

A NEW machine that has been brought out for the manufacturers of rubber, leather and cotton belting is shown in the accompanying illustration. It is designed for sewing belts either with brass or steel wire, and will sew any width of belt up to 60 inches. It is speeded to run sixteen feet a minute, running one line of stitches the length of the belt, and then reversing and running another line backward.

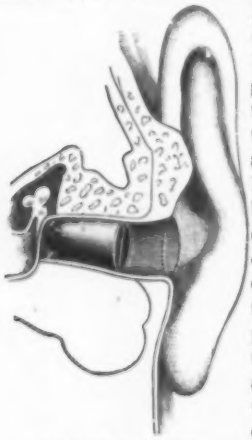


A NEW BELT-SEWING MACHINE.

The feed is so arranged that the stitches can be spaced in any way that will suit the special goods manufactured and the distance between the stitches can also be varied. The machine is exceedingly simple in construction, one man easily running two of them. It is also adapted for endless belts which it sews as well as the open belt. Manufactured by the Staple Fastening Co., No. 90 South street, Boston.

WILSON'S "COMMON SENSE" EAR-DRUM.

THE illustration herewith shows the "Common Sense" ear-drum applied for use. The body of the ear-drum is made of India-rubber. It is in practice about one-half inch in length. The elastic body is formed with a pair of divergent passages which extend through the small end thereof, and within the hollow portion of the body is arranged a transverse diaphragm, having its outer edge flush with the base. The divergent passages render the ear self-ventilating, and the diaphragm braces the base portion of the drum and serves as a medium for removing the drum by the employment of forceps which are made to grip the diaphragm. The rimless and conical body prevents irritation when the drum is in use, while it constitutes a good sound conductor. The feeling of fullness in the head, incident to the use of ordinary drums, is also done away with. The "common sense" drums are made of Pará rubber, and are delicate and pliable. They have no sharp and rough edges, and are invisible when in the ear. They have no wire or string attachment to annoy the wearer. Manufactured by the Wilson Ear-Drum Co., Louisville, Ky.



WILSON'S EAR-DRUM.

RUBBER IN IMITATION OF LEATHER.

A SAMPLE "leather jacket" in which there was no leather at all was recently on exhibition in a Boston store. It was made of a tan-colored rubber compound, was pebbled so that it had a very pretty leather grain, and taken all in all was a very attractive garment. The cost being equal, there is no reason why rubber jackets should not prove superior to leather. They certainly are not as apt to wet through in a driving storm, nor do they need oiling to overcome resultant stiffness.

THE "CHICAGO" WATERPROOF COAT.

THE coat shown in the illustration accompanying this has been christened the "Chicago" and is designed to be as perfect in style and finish as the most fastidious could expect. It has a velvet collar cut and fitted by the same rules that make the collars on the best custom-made overcoats such a success; indeed the collars of the "Chicago" are designed by a custom cutter. The back is the full form fashionable this winter in gentlemen's outer garments. To those who, while they have discarded the cape, like an extra thickness over the shoulders, the double back that the "Chicago" is fitted with will be a recommendation. At the same time the coat is made with a single back so that all may be suited. Manufactured by the Clifton Manufacturing Co., No. 65 Franklin street, Boston.

THE "CHICAGO."

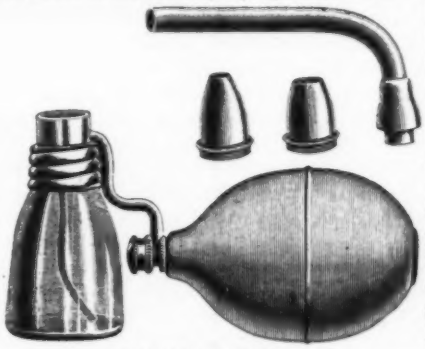
SPURGEON'S RUBBER TIPPED COPYING CLOTH.

THIS patented article is put on the market chiefly as a competitor of the copying cloth having metal ends. The specifications of the patent permit an entire border of rubber, but in the article put on the market the sides are not rubber-edged, because the rubber-tips at the ends so securely hold the threads as to effectually prevent fraying not only at the ends, but also at the sides of the cloth. The rubber-tips are firmly imbedded in, not cemented to, the fabric. This is accomplished in the process of vulcanization, and the tenacity is said to be such that water or ordinary wear and tear cannot loosen the rubber tips. The tips, being soft and flexible, cannot get out of shape or break, and the cloths will lie smooth on the letter book at the ends as well as in the center. The tips cannot be torn off or tear the letter book by catching on the press or other obstruction. After

completely saturating a number of these cloths, they may be thoroughly wrung out in the hands or run through a roller without injury to the cloth or rubber tips. These advantages are claimed to make rubber-tipped cloth more lasting than cloths with other tips or with none. The fabric is also claimed to be specially adapted to copying purposes, quickly absorbing and long retaining moisture. All sizes are supplied. Letter-size cloth, 9x13 inches is $1.25 per dozen. For sale by the inventor, Robert Spurgeon, Englewood, Chicago, Ill., and by stationers generally.

A NEW VASELINE-ATOMIZER.

THE vaseline-atomizers of Codman & Shurtleff have already had a remarkable sale. The latest improvement in these goods is shown in the accompanying illustration. This atomizer, like the others that they make, is for warming and spraying ointments and oils for the treatment of diseases of the upper air-passages. This is perfectly adapted for use with most of the ointments and oils now sold. It has detachable nasal tubes,—adults' and children's sizes,—also a throat tube for vapor inhalation. As the tubes are detachable the atomizing orifices may be easily cleared. The long curved tube shown in the illustration, when attached to the atomizing apparatus, sends out a peculiar smoky vapor which contains all the oily properties of the liquid to be atomized, but does not carry with it the greasy particles which are of no use. This point alone is of great value where fluids are to be atomized for throat and nasal troubles. Manufactured by Codman & Shurtleff, No. 13 Tremont street, Boston.



NEW VASELINE-ATOMIZER.

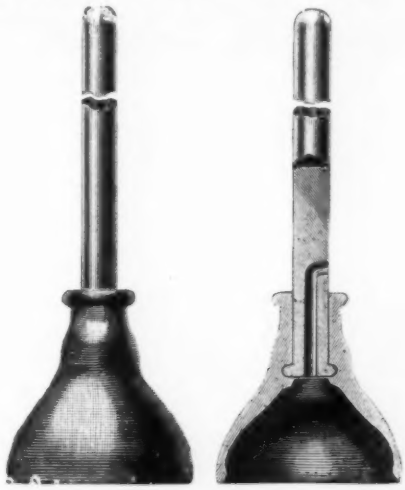
THE PENNISTON FOOD-WARMER.

THE illustration accompanying this shows quite effectively an article that surely has been long called for. It consists of a bag of India-rubber formed with a side pocket, covered by a flap, secured by buttons. This side pocket is fitted with loops along the side of the bag proper, and in these may be placed the feeding bottle or storage-bottle supplied with liquid food. The main bag is filled with hot water and, as rubber is a non-conductor of heat, the water is kept warm for many hours while it imparts its warmth to the bottle in the side pouch. As infants recognize no special hours or intervals in which to assert their wants, it is often next to impossible to supply them with any but cold milk or cold liquid food, and as a consequence they become very fretful. With this arrangement, however, the milk or food may be kept warm for ten or twelve hours and is therefore always on hand when wanted for use. The device is equally valuable for keeping milk cool, as the bag may be filled with salted ice-water and retain coldness in the same manner that it retains the heat, which under some circumstances is equally desirable. It must not be thought that this food-warmer is used only for infants. It is also a great thing for invalids and if there is anything in the announcement of certain celebrated physicians that the best cure for insomnia is a swallow of warm milk, the great body of sleepless men and women in this country should certainly appreciate so practical an invention. It is made in two styles,—one with three pockets for sterilizing bottles and one with two pockets for nursing-bottles. The Davol Rubber Co., Providence, R. I., are the sole manufacturers.

PENNISTON FOOD-WARMER.

THE ANSON "PLUMBER'S FRIEND."

AN article especially adapted for use in the plumbing trade is shown in the illustration herewith. It cannot be said to be new, for the patent dates back some time, and in addition to this it is very similar to force cups that have long been manufactured by a prominent New York house. As explained, however, it appears to be an extra heavy article designed for workmen's use for forcing out waste-pipes to closets, sinks, bath-tubs, basins, etc. The directions for using describe the article itself in a measure hence they are added. "In closets, force the rubber plunger down through the bowl into the trap, then draw up and down as a churn. To force out small waste pipes, such as bath-tubs, wash bowls and sinks. First, fill the bowl partly full of water, then place the rubber plunger over the mouth of the waste pipe and force down on the handle hard and fast until the stoppage is removed. Do not lift the rubber clear of the bottom of the bowl; use only the elasticity or spring of the rubber." Manufactured by Anson & Pratt, Hastings, Neb.



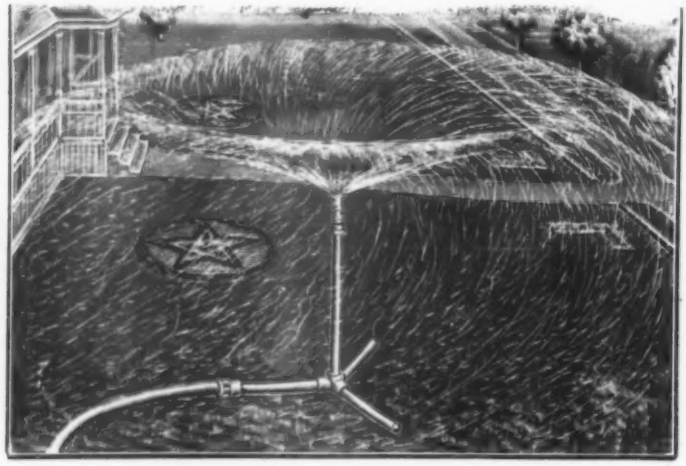
ANSON'S PLUMBER'S FRIEND.

THE NEW WOONSOCKET BOOT-HEEL.

THE ordinary rubber boot-heel is very apt to kick off. This is not because it is not well made or carefully fastened on, but rather from an inherent fault in its shape. If a tree grew straight up from the ground, its trunk forming an exact right angle with the surface, it would not have half the power of resistance to wind and weather that it now has with the spread for root at the base. A bright mind pondering on this truth evolved the new Woonsocket heel. Instead of being at right angles with the shank, it swells out as if it were rooted into it and holds so much the stronger.

THE "WATER WITCH" LAWN-SPRINKLER.

AN effective device for sprinkling lawns, gardens, or flower-beds is here shown. In this sprinkler the water flows with unimpeded force, and is divided and deflected by the two lips of



the swivel-piece which it causes to revolve rapidly, scattering the water in fine drops and evenly over a circular area of twenty-five to forty feet diameter. It is furnished to the trade with or without the stand shown in the illustration. Manufactured by Peter Henderson & Co., New York.

THE JEWEL LAWN-SPRINKLER.

THE enterprising house who are putting this new sprinkler on the market say of it: After many years experience in the construction of lawn sprinklers we have perfected what we consider the most durable and simple machine ever placed on the market. In it the distributing channels are large and there is left no possible chance for them to clog up. It will sprinkle a diameter of from two to forty feet according to water pressure. The thumb screw shown on the right adjusts the stream, when turned to the left it distributes the drops in a wide circle, turned to the right they are thrown so as to cover a half circle. Manufactured by the Detroit Sheet Metal and Brass Works, Detroit, Mich.

THE JEWEL LAWN-SPRINKLER.

A NEW PNEUMATIC TIRE.

ASSOCIATED with the new Manhattan Rubber Co. is Mr. Elliott Burris, known in the bicycle trade of Europe and the United States as a man of extensive experience and practical knowledge, who will, at the National Cycle Show, to be held in Madison Square Garden (New York) in January, introduce to the public a new pneumatic tire of pronounced merit. It seemed like a paradox when, on his return in November from Europe, Mr. Burris announced to his friends that he had discovered a method of constructing a detachable tire without cement, not laced, no mechanical fastening, not held in the rim by inflation and that could not, in any way, be removed from the rim except by the hands, and needing no tools to operate it, but an optical demonstration showed at once immediately it was a fact. The principle is so simple that it quite defies a satisfactory description. Mr. Burris has christened the tire "Simplicity No. 47" and speaks of it as a geometrical problem solved, and so it is. The inner diameter of the rim is increased after the cover is put on, by springing under the edges of the cover an elastic rubber circle into, and which fills, the place between the bottom of the rim and the bottom edges of the cover, forming a cushion bearing for the cover and securing it in the rim as firmly as if bolted and riveted. The operation is so very easily and quickly done that to be entirely appreciated the tire must be seen; though its principle of construction is new to the trade it appeals on sight to every practical man as being correct, and it has been proved by very thorough and exhaustive tests. It is patent upon examination, that it will not rock or roll or creep in the rim, nor will any of its parts chafe or wear against another; there can be no pinching of the air-tube, no blowing off of the cover, consequently no explosions. It is light, strong, safe and secure, and Mr. Burris claims that it is as fast as any tire in the world. A feature which will interest all bicycle-manufacturers and dealers is that the covers are interchangeable, a 1½", 1¾" or 2" cover will fit the same rim. In two minutes the tires on a cycle can be changed from one size to another, whether the rims be made of steel or wood.

DEATH OF PATRICK J. CONLEY.

PATRICK J. CONLEY, of Woonsocket, R. I., was run down and almost instantly killed by a Broadway cable-car in New York on the night of November 14. The coroner was notified and the body was taken charge of by Joseph Banigan, president of the United States Rubber Co., who happened to be in New York at the time, and who heard of the accident very shortly after its occurrence. The funeral took place at St. Charles church, Woonsocket, on November 18, at which time the rubber factories of the Woonsocket and allied companies were closed, thousands of employés attending the funeral. Very Rev. M. McCabe delivered the eulogy.

Mr. Conley was born in Ireland about forty-nine years ago and came to this country when he was five years old, his parents locating in New York in a house upon what is now the site of the "Little Church around the Corner." He acquired his education in New York and when a young man went to Woonsocket and learned the trade of carpenter. About fifteen years ago he entered in partnership with Horace A. Jenckes and Joseph Page as a firm of contractors and builders. They built many important structures, including the mill of the Lawrence Felting Co., at Millville, Mass. In 1882 Mr. Conley completed the construction of the big Millville plant of the Woonsocket Rubber Co. and was made superintendent of the works by President Banigan. Later he was given charge as general superintendent of

both the Woonsocket and Millville plants of the Woonsocket Rubber Co. Shortly after the organization of the United States Rubber Co. he was made their general manager, having charge of all their plants. At the time of his death in New York he and Mr. Banigan were on their way to New Jersey to inspect one of the plants of the United States Rubber Co.

"Mr. Conley had been in our employ for over twelve years," said President Banigan in New York. "He was a hard-working, faithful, and trustworthy employé. He was a contractor and builder before he became our general superintendent, and erected the three factories at Woonsocket. It was on account of his good work in doing this job that we decided to give him the position. He leaves a wife and thirteen children, twelve girls and one boy. Mr. Conley must have been worth upward of $50,000."

The Woonsocket *Reporter* says: "Mr. Conley was strong in his opinions and likes or dislikes for men and measures. His personal appearance suggested strength of purpose combined with repose of manner, and in stature, as in intellect, Nature endowed him liberally. His commodious residence was at North Main street. His home life was full of sunshine. There business cares were generally put aside and his evenings were spent with his children and his books. Accompanied by members of his family he was a frequent patron of opera-house entertainments."

At the coroner's inquest, in New York, the jury decided that Mr. Conley's death was purely accidental, and exonerated the gripman, but maintained that the guards used in front of the cars were insufficient. The coroner severely censured the officials of the railway company for not providing guards of a character to insure a reasonable degree of safety to pedestrians happening to get in the way of the cars.

* * *

WILLARD C. ELLIS, who died in Springfield, Mass., on November 10, was born in Waterford, Vt., and located in Springfield in 1842. For a time he was engaged in rubber-manufacturing and made improvements in machinery for the manufacture of rubber webbing. He was connected afterward with the factory of Smith & Wesson, and took out patents for several improvements on pistols, in addition to other mechanical inventions,

THE RISE IN RECLAIMED RUBBER.

[FROM THE BOSTON COMMERCIAL BULLETIN.]

FOR almost three years old rubbers have been practically stationary in price, except when the market has been temporarily manipulated by speculators for a rise. Such was really the cause of the flurry which took place early last spring when certain New York parties went into the market and offered what at that time seemed like extremely high figures, as was believed to start a boom. The plan was very effective, as every one in the rubber business knows, old rubber boots and shoes going from three to five cents in four or five weeks' time. After the excitement subsided, the price fell back again to its old level of three cents, or very near that. Within a few weeks now the market has been quietly working up from three cents, until very recently, as high as 5¼ cents is said to have been paid by a large eastern consumer.

The west, however, is always ahead of us in advancing the market, as holders there are apt to soar high in their ideas if there is even a prospect of rubbers rising. Their operations, however, are worth watching, as they really make the market, the vast majority of the old rubbers being gathered and held in the west. When the market is advancing, or in a strong position, dealers are apt to hold for figures beyond what seems a reasonable limit, looking at the market from a statistical standpoint. It seems now that the market is having an upward movement. Here in New England there is not enough old rubber to affect the market. However, while the supplies here are under the average, there is probably not much rubber carried in the west as there is ordinarily at this time of the year, and this gives the present impetus to the market.

It seems rather strange in view of the fact that the sale of rubber boots and shoes last winter was unprecedentedly large and that after such a severe winter large quantities of worn-out rubber boots and shoes must be lying around. Judging by the comparatively small amounts which seem to be held in western centers the old rubbers have not been collected. The fact is, collections of all old materials have been discouraged by the low prices. It is the collector of rags who picks up the major part of the old rubber boots and shoes, and as the former were not collected to the same extent as formerly, rubbers were similarly affected.

Dealers and speculators who are willing to pay from 4½ to 5 cents for rubber in anticipation of a considerable advance, abound, however. Some of these situated here in Boston would like to know where good-sized lots are to be had at about that range of price. In short, the outlook most decidedly indicates at least a very strong if not a higher market on old rubber.

THE TRADING IN RUBBER STOCKS.

THE quotations which follow represent the daily transactions in Rubber Stocks on the New York Stock Exchange for each business day since the last report printed in this journal:

DATES.	COMMON.			PREFERRED.		
	Shares.	High.	Low.	Shares.	High.	Low.
November 11..	....	....	....	90	84	83
November 13..	200	39	39	....	....	....
November 14..	100	38	38	....	....	....
November 15..	....	...	....	..	....	....
November 16 .	250	40	39⅞	100	85	85
November 17..	107	40	40	....	....	....
November 18 ..	...	....	. ..	....	...	....
November 20..	20	39½	39½	....	....	....
November 21..	....	....	....	....	....	....
November 22..	....	....	....	....	....	....
November 23.	29	40	40	....	....	...
November 24	75	40¼	40⅛	114	88	88
November 25..	....	...	....	100	88	88
November 27..	125	40	40	50	89	89
November 28..	125	39	39	50	89	89
November 29..	....	....	....	....	....	....
December 1..	....	....	....	....	....	....
December 2..	. ..	....	....	135	84	84
December 4 ..	....	....	....	...	....	....
December 5..	295	42½	42½	....	....	....
December 6..	400	42¾	42	....	....	....
December 7..	200	42½	41½	120	86¼	86¼
December 8..	150	42	42	....	...	....
December 9..	....	....	....	...	....	...
Novemb'r, 1892	31,208	44	38¾	....	....	...
December....	15,943	48	39	2,607	99	94½
January, 1893.	9,604	47¾	42½	5,521	99	94
February	7,024	46¼	43	1,333	97	92½
March...	30,438	58¼	42	2,933	99	93
April	25,625	60½	53⅞	3,251	99½	94¼
May.....	24,999	57½	33	4,835	91	80
June.....	5,474	45⅝	34½	2,323	83	74
July.....	2,774	38¾	25	1,504	77	65
August.....	3,525	29	17	1,943	68	50
September	3,191	38	29	778	79	70
October.....	4,977	45	29¼	2,116	89½	75
November ...	1,031	40¼	38	504	89	83

TRADE AND PERSONAL NOTES.

A NEW rubber company was formed last month in Middletown, Conn., to be known as the Middlesex Rubber Co., and articles of incorporation have been filed with the Secretary of State. The factory formerly occupied by the Stiles & Parker Press Co. has been purchased and it is announced that work will be begun as soon as the necessary machinery can be installed. The authorized capital is $75,000, in $25 shares. The incorporators are: Henry H. Francis, who was superintendent of the Hartford Rubber Works for a number of years (1760 shares); D. B. Baldwin, of Hartford (120 shares); Edward Thayer, Pawtucket, R. I. (400 shares); F. C. Rockwell, West Hartford (120 shares); Henry H. Francis, agent (400 shares); and Henry H. Francis, trustee (200 shares). Mr. Francis has been elected president, and Mr. Baldwin secretary and treasurer. A. C. Squires, of Brooklyn, N. Y., formerly of the Canfield Rubber Co., has been secured as superintendent. The company will make a specialty of manufacturing bicycle-tires for the trade, but at present have no tire of their own to introduce. They will also manufacture dress-shields and other rubber goods.

—The Gleason & Bailey Manufacturing Co. (Seneca Falls, N. Y.) have made a patented steel-hose carriage for Elizabeth City, N. C. They are building two improved hose-wagons for Tampa, Fla., and a steel hook-and-ladder truck for Rouse's Point, N. Y. They are also equipping the fire-department of Monterey, Cal., with additional rolling-stock.

—The Foster Engineering Co. (Newark, N. J. report great activity in the marine and railroad departments of their works. In addition to fitting out the *Columbia* with a full supply of valves, they have an order for two 5-inch, two 4-inch, one 3-inch and eight 2-inch valves for the *Indiana*. The new warships of the Brazilian navy, the *Nictheroy* and the *America*, as well as the torpedo-boats, have been equipped with the Foster pressure regulator.

—The Berlin Iron Bridge Co. (East Berlin, Conn.) have contracts for the roof of the new power-house of the State Street Horse Railway Co., at New Haven. The building will be 250 x 84 feet, the roof-trusses being of iron, covered with slate. They have contracts, also, for a new cotton-shed for the Southern Pacific railway, at New Orleans—350 x 120 feet; the new car-barn of the Easton (Pa.) Traction Co.—200 x 64 feet; and the new foundry of the Turner & Seymour Manufacturing Co., at Torrington, Conn. It is the intention of the Turner & Seymour company to carry no insurance on their building, as the Berlin company guarantee that if all the wooden flasks which the company use at any one time were piled in one place in the building and fired, the roof would suffer no damage.

—A fire in Baltimore on November 13, in the five-story building No. 28 Hanover street, damaged goods belonging to the Woonsocket Rubber Co. to the extent of $2000. The damage was done mainly by water, and the amount was fully covered by insurance. The first floor and cellar of the building are occupied by Charles W. Linthicum, Baltimore agent of the Woonsocket company, and the fifth floor as a storage warehouse for their goods.

—The rubber-goods factory of Morgan & Wright (Chicago) is to be enlarged by a one-story addition, 120 x 72 feet, at No. 32 North May street, to be built of brick at a cost of $6000.

—The Goodyear Rubber Co. have sued out a writ of delivery against Hess, Henle & Co., Louisville, Ky., and their assignee, to compel them to discover their assets. They seek to recover $2863.75 due on account.

—The California Rubber Cement Co., of Knoxville, Tenn., filed articles of incorporation with the Secretary of State on October 23. The incorporators are D. B. Campbell, E. W. White, J. C. J. Williams, R. P. Spence, J. S. Evans, and M. S. Russell.

—The American Rubber Co. received three separate awards at the World's Columbian Exposition, one each for boots, shoes, and clothing.

—The Bridgeport (Conn.) Elastic Web Co. received an award at the World's Columbian Exposition for the superior excellence of "Bridgeport" goring.

—The Brown Shoe Co., of St. Louis, successors to the Brown-Desnoyers Shoe Co., established in 1878, occupy 100,000 square feet of floor space. Their rubber-shoe department is said to do an annual business of $500,000. It is in charge of I. H. Sawyer, who was long connected with the American Rubber Co. It embraces the exclusive local agency for the Candee goods, besides handling the New Jersey and Amazon lines.

—The bicyle-tire department of the Eastern Rubber Manufacturing Co. (Trenton, N. J.) is in charge of J. A. Barnes, an energetic young man full of ideas. During two weeks recently he reported the sale of $40,000 worth of tires.

—The Boston Woven Hose and Rubber Co., after long experimenting, have perfected a tire—the "N. G. L."—which they will place upon the market soon. The special point in this tire is the clamping band by which it is fastened to the rim. The tire is quickly applied to any plain rim that has sufficient depth, either steel, wood, or aluminum. The method of tightening and locking the band is not made public for the reason that the patents are pending.

—A contract for the completion of the Tehuantepec railroad was signed at Mexico on November 18, between the government and the Hon. Charles Stanhope, representing the Dresdner Bank of Germany, and others. As has been mentioned before in this journal, much is expected in the way of developing a country well fitted for rubber-planting from the completion of this road.

—The Boston Gore and Web Manufacturing Co. have erected a new two-story factory, 80x50 feet, at Chelsea, Mass., for the manufacture of shoe-gorings and suspender webs.

—The L. Candee Rubber Co. (New Haven), employing about 2000 hands, says the Boston *Herald*, has just begun running with the largest force available for the machinery, after an unusually dull summer. "All indications point to a booming trade. All the men who were discharged during the summer because of dull times have been taken back, and it is probable that the company will be kept running all winter with a full force and several hours a week over time."

—The Atlantic Works (East Boston) furnished vulcanizers for the new mill of the Boston Woven Hose and Rubber Co., and are in the field for more of the same kind of work. They have a magnificent new boiler-shop, a cut of which appears in their advertisement in this number.

—The Wellman Sole Cutting Machine (Boston) is said to be adapted to cutting druggists' sundries, clothing, and various articles in mechanical-goods factories.

—Percy Carter Bell, F. I. C., F. C. S., lately from England, has opened a technical laboratory at No. 13 Park row, New York, where he will devote himself to expert work in rubber lines as an analytical and consulting chemist. Mr. Bell also expects to manufacture various special ingredients for rubber manufacturers at works outside of New York.

—The Charles River Rubber Works (we report in answer to an inquiry) are not yet located. It is said that they own a lot of land in Cambridge, but there is no building upon it. One of their officers was recently inquiring for a rubber factory with machinery fitted for gossamer work, that could be leased or purchased, which looks as if they were not sure to locate in Cambridge after all.

—The Hawkins Machine Co. send us a list of the rubber-shoe companies that are using their rubber- and cloth-cutter. Among them are the Boston Rubber Shoe Co., the Woonsocket, the National, the Candee, the New Brunswick, the New Jersey, the Meyer, the Granby Rubber Co. (Canada), the Russian-American Rubber Co. (St. Petersburg), and the Columbia Rubber Co.,—the last named being rubber clothing manufacturers.

—Harold S. Pearce, who has taken the business of the S. S. Pearce Co. (Providence, R. I.), is showing some very fine samples of colored starches for the rubber clothing men.

—The Hawkins Machine Co. (Boston) have just built and shipped a planer to the Russian-American Rubber Co. at St. Petersburg. It is to be used in planing the blocks used in their die-cutting press.

—Mr. Emery, of the Staple Fastening Machine Co. (Boston), recently went to New York and down through New Jersey with samples of belts sewed by their new machine, and was much gratified at the interest the manufacturers of mechanical goods showed in the invention.

—The Enterprise Rubber Co. (Boston) have taken possession of their fine new store at No. 135 Essex street and have a look of progressiveness and prosperity that is enchanting. The store fitted expressly for them is light, high studded, convenient, and unusually attractive. As one enters from the street he passes between the oaken desks of the three partners, catches a glimpse of the oak finish of the room, notes the well-arranged goods and the busy clerks, and realizes that everything there is "O. K." Two features of interest in the store are, first the gallery for racking goods that occupies one side, and second, the neat sample cases that cluster about the massive pillars in the middle of the store. The Company will keep their present rooms in the Shoe and Leather Exchange building until spring, as they need the room.

—The Conant Rubber Co. (Boston) have taken possession of their new store at No. 20 Summer street and displayed their goods so that they have an exceedingly attractive lay-out. The store is a large one—220x25 feet—with offices in the rear. It is fitted with the latest things in the way of mackintosh-racks, display-cases, etc., and the windows are very tastefully dressed.

—The 11 P. M. train from Boston on the Boston and Albany is growing in popularity every day. It is said that the reason for this is because the rubber air-mattresses with which every berth is fitted are much easier to ride upon than the old-fashioned kind. They are furnished by the Air Mattress Co., No. 7 Temple place, Boston.

—On January 1 the Hodgman Rubber Co. will give up their store on School street, Boston, moving to Nos. 15–17 Devonshire street. With the removal will come a change in the method of doing the Boston business in that they will give up retailing goods and will confine themselves strictly to the wholesaling of the products of the Hodgman factories, the wholesale business having grown so large as to claim their whole attention. There will be no change in the local management.

—Prescott Brothers (Boston) are rejoicing in the fact that the "Goshen" carpet-sweeper which they handle received a medal and diploma at the World's Fair.

—The Rhode Island Coupling and Rubber Co. (Providence), who assigned recently, have settled with their creditors at 75 cents on the dollar, giving notes as follows: 25 per cent. at thirty days, six months, and twelve months respectively. These notes have endorsers representing $250,000.

—An inquiry comes to THE INDIA RUBBER WORLD for gossamer clippings. Who has any for sale?

—Numerous newspaper paragraphs having appeared, giving information of a confusing sort in relation to new buildings projected by the Boston Rubber Shoe Co., THE INDIA RUBBER WORLD directed an inquiry to that company for the facts. Mr. H. E. Converse authorizes the statement that next spring they will probably erect a large store-house at their No. 2 factory, for the purpose of securing better facilities for handling their goods.

—The report that L. C. Chase & Co. (Boston) had given up the selling agency of the Reading Rubber Works proves to be without foundation. They are, on the contrary, pushing sales through one of their best men who is now in the west, and who has sent in such satisfactory orders that the mills are again running on full time.

—Ed. Wertheim informs THE INDIA RUBBER WORLD that the extensive exhibit of asbestos goods made by Louis Wertheim (Frankfort o/M., Germany) at the World's Fair received fourteen prizes. The exhibit was sold to the Hoffman & Billings Manufacturing Co., of Milwaukee, who will erect it in their store just as it stood at the World's Fair. Ed. Wertheim, who came to America to take charge of the exhibit, has concluded to remain in Chicago as sole agent for the United States, Canada, and Mexico for these celebrated goods. His address is Rooms 403–404, Omaha building.

—The employés in the buckle department of the Enterprise rubber-works (College Point, L. I.), who had been out of work for six months, resumed on November 14. Over 100 men are now employed.

—Fumes of benzine were ignited by a lamp in the varnishing department of the Lycoming Rubber Co.'s works (Williamsport, Pa.), injuring three operatives. One of them, Walter Fisher, aged twenty-one years, died soon after in a hospital.

—All hands at the Candee rubber-works (New Haven) are reported to be working full time, while some are working ninety hours per week. Usually not more than 1500 hands are employed, but a recent report was that 1650 were at work. The Woonsocket Rubber Co.'s Millville mill has been compelled to run thirteen hours a day to keep up with orders. The shipment is reported of five car-loads of goods from that mill within ten days. The Woonsocket company's "Alice" mill on a recent date had 1585 hands employed, with a weekly pay-roll of $13,000. A busy period at the National rubber-works (Bristol, R. I.) was twice broken into during the month by accidents to the machinery. The amount of wages on a recent weekly pay-day was $12,000, there being 1300 hands at work. The Boston Rubber Shoe Co. had at work on a recent date, at Edgeworth, 2750 employés on the pay-roll—the largest number at one time for many years.

TRADE PUBLICATIONS.

THE Rodney Hunt Machine Co., engineers, machinists and iron and brass founders of Orange, Mass., have issued a twelfth edition of their catalogue of turbine water-wheels, the various issues covering a period of manufacture of nearly thirty years. There is much material in this handsome book of 132 pages of interest to those who have reason to use turbine wheels. It is to be noted, on looking through the catalogue, that manufacturers in almost every class have used these wheels

with success, and it is presumable that rubber-manufacturers might find something of interest in this book.

—A new price-list has been issued by the New Jersey Car Spring and Rubber Co. (Jersey City, N. J.), which is in keeping with the policy of the company, with each successive list, to improve upon the preceding one, not only in scope and usefulness, but also in artistic appearance. A clear, full catalogue of goods is of inestimable value to buyers at a distance from the base of supplies. It is difficult to think of any article in the mechanical rubber-goods line, especially in the mat and matting branch, which is not described, and illustrated in this book.

INDIVIDUAL MENTION.

LITTLE that is of interest goes on nowadays without embracing in one way or another representatives of the rubber trade. The recent equipment in New York Harbor of a new navy for the Brazilian government has kept well to the front the name of Mr. Charles R. Flint, who seems to have been the agent for making the purchases in behalf of Brazil. If newspaper reports are true, the success of President Peixoto will leave Mr. Flint's firm in position to realize a handsome profit on the recent transactions. Flint, meanwhile, has not been neglecting his business as a rubber-man. Thus, a newspaper article starting out under large head-lines to report progress in relation to the naval movement concludes: "Mr. Flint is in Providence, R. I., to-day attending a meeting of the United States Rubber Co., of which he is treasurer."

—Mr. J. Elton, secretary of Charles Macintosh & Co. (Manchester, England), whose arrival in this country with the view to arrange for the introduction of the company's new detachable tire was noted in the last issue of this journal, was prevented from attending to his duties by a slight illness which confined him to his room for several days. Mr. Elton sees four weeks' business ahead already, and he may have to remain longer than this in this country.

—Mr. Willard L. Candee, one of the managers of the Okonite Co., Limited (New York), sailed on the *Lucania*, on November 11, for Europe, having arranged for an absence of considerable length. Mr. Candee resigned recently the captaincy of Company B, Twenty-third regiment, N. Y. S. N. G., although he was a popular candidate for promotion in his command.

—President Robert D. Evans, of the American Rubber Co., was an interested visitor at the great horse-show held in Madison Square Garden, New York, last month.

—Mr. Alfred W. Fitz, Treasurer of the Chelsea Wire Fabric Rubber Co., has fully recovered from his accident and is again at the helm at the Chelsea factory.

—The sympathy of the many friends of Mr. Charles Noyes of the Hodgman Rubber Co. (Boston) is extended to him as they learn of the death of his mother, which occurred at Mystic, Conn.

—George M. Ayres has returned to his first love, the rubber business, and is traveling for Mr. Farwell, the New England agent of the Empire Rubber Manufacturing Co., of Trenton.

RUBBER SALESMEN ON AND OFF THE ROAD.

THE name of Towner is one well known in the rubber trade, and in the southwest few traveling-men are higher esteemed than Mr. Richard Paul Towner, the subject of our sketch. Mr. Towner started on the road in the fall of 1890, when he was only seventeen years old. He covers a large territory, including Tennessee, Kentucky, Alabama, Mississippi, Arkansas, Louisiana, and Texas. Before Mr. Towner was eighteen years old he was familiar with this extended territory. Traveling for a general rubber house, he was well posted in all the departments of the business, and had been able to sell everything, including fire-hose to the Little Rock (Ark.) fire-department. The Traveler's Protective Association has a very flourishing branch in Memphis, and Mr. Towner is the youngest member of the association. He is well known in New York rubber circles, and generally makes a pilgrimage to the metropolis whenever a vacation presents itself. When not on the road Mr. Towner makes his home in Memphis. He is the son of H. N. Towner, of the well-known rubber jobbing-house of Messrs. Towner & Co., of that city.

RICHARD P. TOWNER.

* * *

WILLIAM H. DAFFRON put in a day at his home in Richmond, Va., en route to Baltimore, which city he left in August with samples for the Patapsco Rubber Co. During his long trip he has been through nine States and over many miles of Southern territory. Much to his disgust he had fair weather nearly all the time.

—C. F. Hamilton, of the Apsley Rubber Co., was in Hudson, Mass., recently at the mill of his company. Few men in the trade are better or more favorably known than Mr. Hamilton.

—Most of the large road force of the Stephen Ballard Rubber Co. (New York) are working towards home for Christmas. Their Mr. Chandler spent Thanksgiving in Massachusetts.

—November was a very dull and unsatisfactory month to those houses that retail rubber goods. It was dry and warm, and the demand for both mackintoshes and footwear was especially light in most of the large cities. It is thought that the unloading of so many overcoats by the wholesale clothing-houses at retail and at very low prices has hurt the mackintosh trade somewhat in the East.

—William E. Wysham, of the Hodgman Rubber Co., Gilbert Congdon, of the Cleveland Rubber Co., and W. H. Corner, Jr., of the Boston Rubber Co., will spend Christmas in Baltimore.

—William Thomas, who has been in the rubber trade in Philadelphia for many years—having been first with Messrs. Town & Brother and now with Messrs. R. Levick's Son & Co., became a benedict some time ago, though he kept this interesting fact from some of his friends in the traveling fraternity. They all wish him the best of everything, however.

—George H. Payne, of McDonnell, Payne & Co. (Baltimore), is in the southwest, making a quick trip through the large cities for holiday goods.

—William H. Sheldon reports a good success with the new red water-bottles, sold by his company, the Columbia Rubber Works Co. (New York.)

—Robert C. Day, of the Day Ruber Co. (St. Louis), is at home after a good trip through the southwest.

—J. W. Hoffman, one of the latest additions to the road forces of Messrs. Latta & Mulconroy, is doing well in his new position.

—James D. Ferguson, of the India Rubber Glove Manufacturing Co. (New York), is at home for the holidays.

—December 5 showed the first snow storm of the season in Philadelphia, and the careful Quakers soon flocked to the rubber-stores to be shod with combination-priced boots and shoes. Kicks about the very small advance put on a few styles of shoes by the retailers were few and far between, and the Chestnut street stores were doing a land office business all day.

—C. F. Becker, the well-known rubber-man who for years has had a well-appointed store on Eighth Avenue, New York, has secured a large order for mats for a new building.

REVIEW OF THE RUBBER MARKET.

FOR the last few days the rubber market has been rather quiet, but we were not wrong in predicting in last month's review an active market for this month. Though business in general has been exceedingly dull and sluggish, the rubber trade fortunately failed to reflect the general industrial condition. Had business been better all along the line, the rubber trade would naturally have exhibited even more satisfactory results than those we are able to record to-day. But the signs of a general revival are few and scattered. While the elections of November seemed to have an invigorating effect on trade and industry, that tendency was of very brief duration, and several things since then have occurred which have arrested the recovery of the industrial world from the panic of the summer and fall. The vagueness of the President's message on the tariff and financial questions, the prospects of a long debate in Congress on the Wilson tariff bill, and the total uncertainty as to the final shape of the new tariff,—all these factors have a discouraging effect on investors, buyers, and manufacturers. Business on the Stock Exchange has been extremely dull, and the majority of the transactions seem to have been confined to professional operators, the general public still being timid and doubtful. Money is abundant, too abundant, in fact, for the good of the business world. The rubber trade presents an exception to some extent. Until a few days ago, there has been a steady, healthy, and good business, with the result that prices have advanced somewhat. The deliveries have been large; the stocks are light. The rubber manufacturers have been buying liberally, though in smaller quantities than last year, when there was nothing to induce excessive caution. Many rubber factories—notably in the boot and shoe line—are running full time, while the retailers anticipate a good business during the next few weeks. There is a favorable prospect for next month.

Pará has not been affected by the disturbances growing out of the Mello insurrection. The production of rubber this year has been greater than even that of last year, though last year's figures exceeded any preceding year's production. The demand for rubber is also increasing, however, and production is not outstripping consumption.

The statistical position of Pará rubber in New York and elsewhere is as follows:

	Fine and medium.	Coarse.	Total.		Totals 1892.
Stock, October 31	585	24	609	=	663
Arrivals, November	409	234	643	=	738
Aggregating	994	258	1252	=	1401
Deliveries, November	428	234	662	=	779
Stock, November 30	566	24	590	=	622

	1893.	1892.
Stock in England, November 30	765	743
Deliveries in England, November	675	994
Pará receipts, November	1825	1860
Stock in Pará, November 30	855	375
World's supply, November 30. [Excluding caucho]	3320	3300
Pará receipts, July-November. [Five months of crop year.]	7235	6945

The latest quotations in the New York market are:

Pará, fine, new	68@70	Sierra Leone	25@38
Pará, fine, old	72@75	Benguela	47@48
Pará, coarse, new	48@53	Kongo Ball	36@40
Pará, coarse, old	none here	Small Ball	33@36
Caucho (Peruvian) strip	49@50	Flake, Lump and Ord.	27@28
Caucho (Peruvian) ball	53@54	Accra Flake	17@18
Mangabeira, sheet	36@40	Madagascar, pinky	58@60
Esmeralda, sausage	50@51	Madagascar, black	38@41
Guayaquil, strip	35@42	Borneo	26@42
Nicaragua, scrap	49@50	Gutta-percha, fine grade	1.30
Nicaragua, sheet	47@48	Gutta-percha, medium	1.00
Thimbles	38@49	Gutta-percha, hard white	85
Tongues	33@39	Gutta-percha, lower sorts,	nominal.

In regard to the financial situation Messrs. Simpson & Beers, brokers in crude India-rubber and commercial paper, advise us as follows:

"Throughout November our banks have increased their reserves, and the end of the month showed the enormous amount of $75,000,000 surplus lodged with them. The same noticeable scarcity of prime commercial paper exists, and first-class Receivables are wanted at 4 and 5 per cent., four to six months' maturity; prime single, three to five months' paper, at 5½ to 6 per cent. The great abundance of money indicates the dullness in general business, particularly in speculative lines."

AFRICAN RUBBER—LIVERPOOL.

TO THE EDITOR OF THE INDIA RUBBER WORLD: During the month of November the market for medium descriptions of rubber has been uniformly steady, and a large business has been completed. The stocks here of good medium kinds are now very light, and an advance on late rates has been demanded during the last few days. Prime Accra Biscuits have been sold at 1/11, 1/11¼ @ 1/11½. Benguela Niggers have been sold at 1/11 @ 1/11¼. Fifty tons of Thimbles sold at 1/6¾ and 70 to 80 tons Nigger at 1/4 @ 1/4¾. Good quality old Calabar sold at 1/5½ and ordinary quality at 1/3 @ 1/4. Sales of soft Liberian have been made at 1/1¼, closing rather buyers at this figure. Unless arrivals come forward very freely, we anticipate slightly higher prices during the next two months. We quote as follows:

	English price.	Approximate price laid down in New York.
Soft Liberian	1/1½ @ 1/2	27 @ 28c.
Soft Liberian (pasty)	8½	17c.
Hard Liberian	1/4	32c.
Accra, Saltpond and Cape Coast Biscuits of fair quality	1/10½	45c.
Accra Biscuits, best quality	1/11½ @ 2/–	47 @ 48c.
Addah Niggers	1/8½ @ 1/9	41 @ 42c.
Prime selected Sierre Leone Niggers	1/6 @ 1/6½	36 @ 37c.
Grand Bassam and Assinee	1/5 @ 1/6	34 @ 36c.
Prime Gambia Niggers	2/– @ 2/1	48 @ 50c.
Mixed Cameroon	1/5 @ 1/6	34 @ 36c.
Large Cameroon or Batanga Ball	1/5 @ 1/5½	34 @ 35c.
Best Kongo Ball	1/8 @ 1/8½	40 @ 41c.
Gaboon Ball or second Kongo Ball	1/7½ @ 1/8	39 @ 40c.
Thimbles	1/6½ @ 1/6¾	37 @ 37½c.
Flake	1/0½	25c.
Lump Flake	1/1 @ 1/1¼	26 @ 26½c.
Prime Black Manoh Twists	2/4 @ 2/4½	56 @ 57c.
Old Calabar	1/4 @ 1/6	32 @ 36c.
Loanda Niggers	2/5½ @ 2/7	59 @ 62c.
Benguela Niggers c. i. f. New York	1/11 @ 1/11½	46 @ 47c.

In the London market for medium kinds there has also been a good demand. Madagascar Niggers are now coming forward of rather better quality and 1/3¾ @ 1/4 has been paid for this grade. Mozambique Ball sold at 2/3 @ 2/3½; pinky Madagascar at 2/3 and Gingerbread Madagascar at 1/2½ @ 1/3.

We append a statement of Liverpool rubber statistics for the month of November. WM. SYMINGTON & CO.

Liverpool, December 2, 1893.

LIVERPOOL RUBBER STATISTICS.

	Pará grades.	Africans.
Stocks, November 31 (pounds)	1,514,240	1,456,000
Arrivals during November	1,682,240	701,120
	3,196,480	2,157,120
Stocks, November 30	1,693,440	1,335,040
Deliveries during November	1,503,040	822,080
As against deliveries during October	1,314,880	752,640

IMPORTS OF CENTRALS.

BELOW will be found in detail the imports at New York, during November, 1893, of India-rubber from Mexico, Central America, and South America, other than Pará grades:

	POUNDS.
Nov. 2.—By the *Newport*=Colon and other ports:	
H. Marquardt & Co	1,467
Lanman & Kemp	857
Flint & Co	425
A. P. Stroud	1,930
G. Pardo & Co	38
To Order	2,250
R. Samper & Co	506
J. M. Ceballos & Co	1,760
Hirzel, Feltman & Co	2,000
To Order	5,000
Piza, Nephews & Co	5,700
Bock & Co	1,900
G. Amsinck & Co	7,700
Total	32,223
Nov. 2.—By the *El Dorado*=New Orleans:	
Earle Brothers	3,500
Nov. 2.—By the *Yucatan*=Frontera:	
J. Agostini	100
Nov. 7.—By the *Alvena*=Port Limon:	
To Order	425
Nov. 7.—By the *Hudson*=New Orleans:	
Earle Brothers	7,000
Nov. 10.—By the *Seneca*=Vera Cruz:	
J. A. Medina	750
Nov. 11.—By the *Columbia*=Colon:	
Andreas & Co	3,164
Piza, Nephews & Co	388
Total	3,552
Nov. 12.—By the *Alene*=Cartagena and other ports:	
G. Amsinck & Co. (Barranquilla)	200
D. A. De Lima & Co. (Cartagena)	1,500
Henry W. Peabody (Cartagena)	200
Flint & Co. (Cartagena)	28,500
J. Ferro (Cartagena)	2,800
Hoadley & Co. (Cartagena)	200
W. R. Grace & Co	1,500
Ellinger Brothers (Port Limon)	1,500
Total	36,400
Nov. 14.—By the *Louisiana*=New Orleans:	
Earle Brothers	12,400
A. Rotholz	200
Cerf, Hirsch & Co	2,300
Total	14,900
Nov. 15.—By the *Orizaba*=Vera Cruz:	
H. Marquardt & Co	450
Nov. 20.—By the *New Orleans*=New Orleans:	
Earle Brothers	2,000
W. H. Crossman & Brothers	10,500
Total	12,500
Nov. 21.—By the *Endsleigh*=Guayaquil:	
J. M. Ceballos & Co	9,424
W. R. Grace & Co	9,618
Total	19,042
Nov. 22.—By the *City of Pará*=Colon:	
Munoz & Espriella (Central America)	105
J. Aparicio & Co. (Central America)	6,931
Hoadley & Co. (Central America)	700
W. R. Grace & Co. (Central America)	5,672
R. F. Cornwall (Central America)	415
W. R. Grace & Co. (Mexico)	4,180
F. Probst & Co. (Mexico)	858
J. M. Ceballos & Co	8,530
Piza, Nephews & Co. (Panama)	5,065
New York Commercial Co	16,600
Jacob Balz	2,348
Dumarest Brothers	2,167
Hirzel, Feltman & Co	4,627
Lanman & Kemp	4,698
C. Roldan & Van Sickel	6,490
A. Santos & Co	9,730
G. Amsinck & Co	23,918
Total	103,034
Nov. 27.—By the *Athos*=Cartagena:	
Henry W. Peabody	2,250
H. S. Forwood (for Havre)	2,550
Total	4,800
Nov. 28.—By the *Hudson*=New Orleans:	
Earle Brothers	6,000
Gillespie Brothers	2,000
To Order	2,000
Total	10,000
Nov. 29.—By the *City of Washington*=Vera Cruz:	
J. W. Wilson & Co	150
Louis Manjo	150
H. A. Forrest	2,700
Total	3,000
Total Imports for November	251,676
Total for October	255,321
Total for September	143,364
Total for August	134,636
Total for July	293,52[illegible]
Total for June	190,921
Total for May	257,481
Total for April	200,383
Total for March	277,459
Total for February	244,526
Total for January	222,308
Total for December, 1892	208,196
Total for November	297,100
Total for October	207,715
Total for September	140,756

The stock of Pará rubber on November 30 consisted of:

	Fine.	Entre-fine.	Negroheads.	Total.
First hand	515	56	61	632 tons.
Second hand	117	4	3	124 "
Total	632	60	64	756 "

The stock of Ceará rubber on November 30, consisted of 744 bales; stock of Peruvian rubber, 11 tons.

IMPORTS FROM PARA.

THE imports in detail of rubber direct from Pará at the port of New York, since our last report, have been as follows, all quantities being expressed in pounds:

November 27.—By the steamer *Ambrose*, from Pará:

	Fine.	Medium.	Coarse.	Caucho.	Totals.
J. Banigan	61,000	13,200	78,400	2,200	154,800
Reimers & Meyer	45,000	5,400	75,600	.....	126,000
Boston Rubber Shoe Co.	40,000	10,300	63,300	6,300	120,200
O. G. Mayer & Co	44,500	3,400	3,600	.....	51,500
Lawrence Johnson & Co.	33,500	3,500	8,400	.....	45,400
Shipton Green	28,700	2,600	10,000	.....	41,300
Total	252,700	38,400	239,600	8,500	539,200

December 4.—By the steamer *Mount Lebanon*, from Pará:

Joseph Banigan	168,500	18,000	45,000	.....	231,500
New York Commercial Co.	187,100	13,700	46,100	.....	252,000
Boston Rubber Shoe Co.	160,500	13,200	35,000	600	209,300
Reimers & Meyer	57,300	10,400	25,500	1,000	94,200
G. Amsinck & Co	5,300	.....	600	.....	5,900
Total	590,200	64,900	167,200	1,600	823,900

November Imports of Pará rubber	1,416,000
October Imports	1,661,600
September Imports	757,200
August Imports	914,100
July Imports	579,200
June Imports	1,955,915
May Imports	1,367,600
April Imports	3,881,400
March Imports	2,107,600
February Imports	2,924,300
January Imports	3,349,000
December Imports, 1892	4,809,600